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ACORN USER

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ISSUE 202 CHRISTMAS 1998 £3.95

CASTLE TECHNOLOGY

FOR ALL YOUR ACORN HARDWARE & PERIPHERALS



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25% off when bought with drive or scanner etc

CT's Storm SCSI interface offers unbeatable performance. Using 15MB/s SCSI components and our ultra-reliable SCSI FS, Storm's a guaranteed winner.



	Ex VAT	Inc VAT
A30x0 IDE interface kit - 2.5" hard drive	£52	£61.10
A3020 fixing kit - 2.5" hard drive	£8	£9.40
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Storm8 SCSI2 interface - A30x0 A4000	£88	£103.40
Storm16 SCSI2 i/f - A300/A400 A5/7000	£96	£112.80
StormDMA32 SCSI2 i/f RPC Phoebe	£128	£150.40
StormPCI UltraWide SCSI i/f (Oct '98)	£199	£233.83
Storm16 SCSI2/10BaseT Ethernet i/f	£148	£173.90
Storm16 SCSI2/10BaseT&2 Ethernet i/f	£196	£230.30

HARD DRIVES (BARE)

120MB A3000/A3010 interface included	£95	£111.63
120MB A3020 fitting kit included	£59	£69.33
120MB A300/A400 interface included	£100	£117.50
500MB A3000/A3010 interface included	£128	£150.40
500MB A3020 fitting kit included	£89	£104.58
500MB A300/A400 interface included	£134	£157.45
210MB 3.5" IDE for A4000 & A5000	£45	£52.88
500MB 3.5" IDE for A4000 & A5000	£55	£64.63
1.2GB 3.5" IDE for RiscPC & A7000/+	£59	£69.33
2GB 3.5" IDE for RiscPC & A7000/+	£85	£99.88
4GB 3.5" IDE for RiscPC & A7000/+	£105	£123.38
100MB 3.5" SCSI	£39	£45.83
500MB 3.5" SCSI	£59	£69.33
2GB 3.5" SCSI	£115	£135.13
3GB 3.5" SCSI	£139	£163.33
4GB 3.5" SCSI	£159	£186.83
6GB 3.5" SCSI	£239	£280.83

EXTERNAL SCSI CASES

for hard drives CD drives & removeable drives
FREE headphones and data cable worth over £20

The unique Combo Case - takes any two SCSI devices & gets rid of all those cables, mains leads etc. Accepts any 5.25" unit.



Acorn M E U 2x CD + free 5.25" slot	£69	£81.08
Case for single SCSI device	£40	£47.00
Combo case for 2 SCSI devices	£60	£70.50

SCANNERS

inc FREE software worth £49

The new ultra-slim ScanExpress 36-bit colour scanner has a compact footprint, fast scanning speeds and quiet operation. Free ImageMaster software and TWAIN driver. Free PC interface/software kit (SCSI only). Optional transparency adaptor available.



ScanExpress 6000 parallel	£99	£116.33
ScanExpress 12000 parallel	£119	£139.83
ScanExpress 6000 SCSI	£119	£139.83
ScanExpress 12000 SCSI	£169	£198.58
Scanflat 1200 pro SCSI	£399	£468.83
ImageMaster & Twain	£49	£57.58
Scanflat transparency kit - slides etc	£149	£175.08
ScanExpress transparency kit-slides etc	£75	£88.13
CanoScan 2700F film scanner	£499	£586.33

FIXING KITS, CABLES etc

Podule case for A3000	£16	£18.80
Fixing kits for hard drives	£8	£9.40
A4 IDE hard drive fixing kit	£12	£14.10
A300 series backplane (4 way 4 layer)	£48	£56.40
A7000/+ 1 slot backplane (not with CD)	£34	£39.95
Risc PC 2 slot backplane	£30	£35.25
2nd slice for Risc PC inc 105watt PSU	£99	£116.33
2nd slice for Risc PC	£76	£89.30
SCSI I & II cables choice from	£10	£11.75
SCSI/IDE ribbon cables from	£5	£5.88
SCSI terminator/adaptors (selection)	£10	£11.75
Monitor cable for all Acorn (selection)	£10	£11.75

XTRA HARD DRIVES

Guaranteed 4MB+/sec read transfer rate with Castle Storm DMA32 SCSI card

4GB XTRA 3.5" SCSI	£259	£304.33
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8GB XTRA 3.5" SCSI	£429	£504.08
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Fastest on market - externally boxed and ideal for Video use - StormPCI or Storm DMA32 card recommended

4GB Video SCSI external	£449	£527.58
9GB Video SCSI external	£649	£762.58
18GB Video SCSI external	£1199	£1408.83

CD ROM DRIVES

inc FREE driver software & fixing kit worth £29

Castle Technology's range of CD ROM drives are chosen for their reliability, ease of use and robustness. They have fast access times, and include driver software. They are particularly suitable for multimedia applications.



4x speed SCSI CD ROM drive	£29	£34.08
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24x speed IDE CD ROM drive	£45	£52.88
32x speed IDE CD ROM drive	£49	£57.58
40x speed IDE CD ROM drive	£69	£81.08
IDE CD driver for Risc PC & A7000	£25	£29.38
6x4x2 CD ReWriter inc !CDBurn	£325	£381.88
6x4x2 Ext CD ReWriter inc !CDBurn	£389	£457.08
6x2x2 CD ReWriter inc !CDBurn	£280	£329.00
6x2x2 Ext CD ReWriter inc !CDBurn	£340	£399.50
CD ROM fixing kit (data & audio cable)	£4	£4.70

CD TOWERS

7 SCSI CD towers with lockable doors

Add the Castle Technology CD Tower to your network and have simultaneous access to between 7 & 28 CD-ROMs. Enables CD resource discs to remain locked and untouched but accessible from all over the network. Up to 4 towers can be connected to one computer. Fully compatible with Access CD network software.



8x CD 7 drive Tower	£379	£445.33
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SPECIAL OFFER!

External 100MB Zip drive (SCSI or parallel)

Up to 20 times faster & 80 times the capacity of a standard floppy disc drive, the Zip drive is now an industry standard means of storing and transferring data. Choose between SCSI version (20x faster than floppy) or parallel port version (5x faster than a floppy).



Special limited offer from £99 (£116.33 inc VAT) including FREE driver software 1 FREE 100MB disc

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Ergo keyboard for pre Risc PC	£69	£81.08
Ergo keyboard for Risc PC A7000/+ N/C	£39	£45.83
Keyboard for Risc PC A7000/+ N/C	£19	£22.33
Keyboard cable (6 way)	£10	£11.75
Mouse for all Acorns (not A7000 etc)	£12	£14.10
Mouse for A7000/+ N/C Phoebe	£15	£17.63
Mouse balls heavy (pack of 10)	£15	£17.63
Floppy drive any Acorn except A300 A4	£30	£35.25
Replacement floppy drive for A4	£79	£92.83

REMOVABLE DRIVES

- free media with all drives

For flexible, expandable storage, the infinite capacity of a removable drive is perfect. All drives are the latest spec, and internal versions can be fitted into the CT Combo case (for details see 'External SCSI Cases' in column 1). Maximum data transfer rate up to 8.8MB/sec (Nomai).



ZIP drive internal 100MB SCSI	£99	£116.33
ZIP drive external 100MB SCSI	£99	£116.33
ZIP drive external parallel not A300 etc	£109	£128.08
Iomega Parallel ZIP driver (100MB)	£25	£29.38
Syquest Flyer 230MB SCSI external	£85	£99.88
MaxIT internal 500MB SCSI drive	£129	£151.58
Nomai internal 750MB SCSI drive	£165	£193.88
Nomai external 750MB SCSI drive	£215	£252.63
JAZ internal 1GB SCSI drive	£189	£222.08
JAZ external 1GB SCSI drive	£199	£233.83
SyJet internal 1.5GB SCSI drive	£219	£257.33
SyJet external 1.5GB SCSI drive	£255	£299.63
JAZ internal 2GB SCSI drive	£360	£423.00
JAZ external 2GB SCSI drive	£410	£481.75
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NEW NEW NEW!!

14.1" TFT FLAT SCREEN

£200 OFF! Special price only **£599** £703.83 inc VAT

ProLite 36 space-saving flat screens from Iiyama. Viewable area almost 17". Max resolution 1024x768. Low power consumption and reduced eye strain make these a top buy for schools and business.

MEMORY

A300 & A400 1-4MB	£75	£88.13
A300 & A400 4-8MB	£119	£139.83
A3000 1-4MB	£55	£64.63
A3000 4-8MB	£149	£175.08
A3000 serial port upgrade	£25	£29.38
A3010 1-2MB	£25	£29.38
A3010 1-4MB	£59	£69.33
A3020 & A4000 2-4MB	£35	£41.13
A5000 2-4MB	£60	£70.50
A5000 4-8MB	£139	£163.33
Risc PC A7000/+ 16MB SIMM	£17	£19.98
Risc PC A7000/+ 32MB SIMM	£39	£45.83
Risc PC A7000/+ 64MB SIMM	£93	£109.28
Risc PC 2MB VRAM	£69	£81.08

PROCESSORS & RISC OS

StrongARM processor	£249	£292.58
Risc OS 3.11 chip set	£29	£34.08
Risc OS 3.11 manual set	£20	£23.50
Risc OS 3.11 hardware upgrade - A300	£20	£23.50
Risc OS 3.7 chip set	£50	£58.75
ARM 610 processor (2nd user)	£69	£81.08
ARM 3 processor for A3000 A300 A400	£99	£116.33

MODEM

56k external inc FREE online time	£89	£104.58

COMBOS

Full range available - free fitting in combo case when all purchased at the same time

8x CD & 100MB HD - external SCSI	£130	£152.75
8x CD & 500MB HD - external SCSI	£150	£176.25

REMOVABLE MEDIA

Zip 100MB media	£8	£9.40
Zip 100MB media (6 pack)	£45	£52.88
Syquest 105MB media	£29	£34.08
Syquest 135MB media	£21	£24.68
Syquest 230MB media	£19	£22.33
Syquest 270MB media	£32	£37.60
MaxIT 500MB media	£29	£34.08
Nomai 750MB media	£38	£44.65
JAZ 1GB media	£58	£68.15
SyJet 1.5GB media	£55	£64.63
JAZ 2GB media	£79	£92.83
PD 630MB media	£18	£21.15
CD 630MB write once media (Pk of 10)	£12	£14.10
CD 630MB re-write media	£12	£14.10

COLOUR MONITORS

3 year warranty on all monitors (1 year on AKF18)

CT supply the full range of Acorn systems including the latest release – Phoebe. We offer special prices which include generous free software packages and the acclaimed Castle Technology technical support helpline.

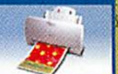


ACORN AKF18 14" - pre RiscPC	£99	£116.33
14" SVGA	£85	£99.88
15" digital SVGA	£99	£116.33
17" digital SVGA	£189	£222.08
15" digital SVGA Iiyama	£159	£186.83
17" digital SVGA Pro 0.25 Iiyama	£329	£386.58
21" digital SVGA Iiyama	£729	£856.58
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INKJET PRINTERS

inc FREE data cable & Acorn driver WORTH £20

Advanced inkjet technology for bright colour images & fast printing times. Up to 720dpi resolution (near photographic quality). Supplied with Acorn drivers & data cables.



CANON BJC-80	£149	£175.08
CANON BJC-250	£84	£98.70
CANON BJC-4300	£105	£123.38
CANON BJC-4650	£227	£266.73
CANON BJC-620	£179	£210.33
EPSON Stylus colour 300	£109	£128.08
EPSON Stylus colour 440	£115	£135.13
EPSON Stylus colour 640	£149	£175.08
EPSON Stylus colour 800	£219	£257.33
Parallel printer cable	£10	£11.75
Turbo driver for above printers	£45	£52.88
Acorn printer driver for any listed printer	£10	£11.75
TCP/IP (LPR) postscript printer driver	£175	£205.63

SPECIALS

DOA warranty only

JP150 sheet feeder	£10	£11.75
Master 128 motherboard	£10	£11.75
German keyboards RiscPC/A7000 etc	£10	£11.75
A5000 Power Supply Unit	£15	£17.63
SJ Econet Bridge	£20	£23.50
Acorn Econet interface	£5	£5.88
SJ Econet starter kit	£20	£23.50
PC card for A3000 A3010 A3020 A4000	£99	£116.33
Startwrite wordprocessor	£5	£5.88

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Orders over £200 paid by debit card	FREE	FREE
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Fitting charge (inc collection)	£18	£21.15

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Visit our web site! http://www.castle-technology.co.uk

All products carry a full 1 year warranty unless otherwise stated.



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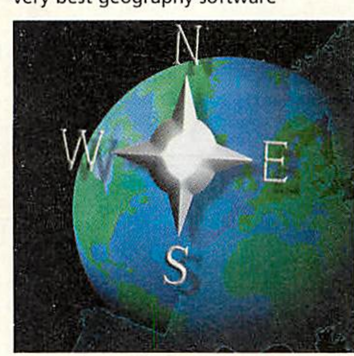
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*** with all packs ***

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233Mhz RiscPC Offers

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RPC SA base models from **£854** inc VAT
AND we will match or beat your best offer.

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A7000 +16M / 2.1G / 32xCD /15" mon & Stereo Spk for only £749 ex. VAT
Please ask for other combinations

Special Offer SCSI 8x 4 disc Autochangers only £99.00 + vat (£116.33)

Limited quantity Available

IDE HARD DRIVES AND SUB-SYSTEMS *WHY PAY MORE???*

A3000/A3010 Hard drives

	Ex. VAT	Inc. VAT
Internal 85/120 Mb	£ 99	£116.33
Internal 170 Mb	£109	£128.08
Internal 340 Mb	£129	£151.58
Internal 512 Mb	£139	£163.33
Internal 850 Mb	**£149**	**£175.08**
Internal 1 Gb	£159	£186.83
Internal 2 Gb	£169	£198.58
Internal 3 Gb	**£179**	**£210.33**

External A3000 add £20.00 +VAT
includes CD ROM interface

A3020 Hard drives

	Ex. VAT	Inc. VAT
85Mb	£49	£57.58
170Mb	£59	£69.33
340Mb	£79	£92.83
512Mb	**£89**	**£104.58**
850 Mb *	£149	£175.08
1 Gb *	£159	£186.83
2 Gb *	£169	£198.58
3 Gb *	**£179**	**£210.33**

* includes CD ROM interface For partioning software only deduct £25.00 + vat (29.38)

A4000/A5000/A400

	Ex.VAT	Inc. VAT
420Mb *	**£76**	**£89.30**
540Mb *	**£85**	**£99.88**
700Mb *	**£93**	**£109.28**
1.2Gb *	**£115**	**£135.13**
2.1Gb *	**£125**	**£146.88**
3.2Gb *	£135	£158.63
4.0Gb *	**£145**	**£170.38**

* inc. internal removable HD & CD ROM i/f
For partioning software only deduct £25.00 + vat (29.38)

RPC 1&2/A7000

	Ex. VAT	Inc. VAT
512Mb	**£59**	**£69.33**
1.2Gb	**£70**	**£82.25**
2.1Gb	**£80**	**£94.00**
3.2Gb	£90	£105.75
4.3Gb	**£99**	**£116.33**
6.4Gb	**£110**	**£129.25**
8.4Gb	**£135**	**£158.63**
13.6Gb	**£200**	**£235.00**
16.8Gb	**£278**	**£326.65**

CD-ROMS

	IDE internal	IDE external	SCSI internal	SCSI external
32 x	£45.00 (£52.88)	£99.00 (£116.33)	£70.00 (£82.25)	£125.00 (£146.88)
24 x	£39.00 (£45.83)	£95.00 (£111.63)	£60.00 (£70.50.)	£115.00 (£135.13)
16 x	£34.00 (£39.95)	£89.00 (£104.58)	£40.00 (£47.00)	£95.00 (£111.63)
12 x	£34.00 (£39.95)	£89.00 (£104.58)	£34.00 (£39.95)	£90.00 (£105.75)
8 x	£30.00 (£35.25)	£84.26 (£99.00)	£30.00 (£35.25)	£84.26 (£99.00)

EXTERNAL IDE REQUIRE SUITABLE I/F (3.5 driver £15+ vat) IDE int. fitting kit £5 inc.

EXT SCSI includes SCSI I cable, SCSI II cable £5 (£5.87) extra. SCSI fitting kits from £10 + vat

SCSI HARD DRIVES

540M (limited Stock)	£60.00	(£70.50)
1.0Gb	£70.00	(£82.25)
2Gb (7200rpm)	£125.00	(£146.88)
4.3Gb (5400 or 7200rpm)	£150.00	(£176.25)
4.3Gb (10,000rpm)	£255.00	(£299.63)
9.1Gb (7200rpm)	£280.00	(£329.00)
18.6Gb 7,200rpm	£680.00	(£799.00)

REMOVABLE HARD DRIVES

Panasonic PD / CD-ROM from £139.00 + Vat

	IDE internal	IDE external	SCSI internal	SCSI external	Parallel PC /Mac	Parallel ACORN
Zip 100	£69.00 (£81.08)	£129.00 (£151.58)	£100.00 (£117.50)	£100.00 (£117.50)	£100.00 (£117.50)	£115.00 (£135.13)
Ezflyer 230					£80.00 (£94.00)	£130.00 (£152.75)
Nomai 750			£165.00 (£193.88)	£215.00 (£252.63)		
Jaz 1Gb			£189.00 (£222.08)	£199.00 (£233.83)	£224.00 (£263.20)	£249.00 (£292.58)
Syjet 1.5G	£219.00 (£257.33)	£269.00 (£316.08)	£219.00 (£257.33)	£269.00 (£316.08)	£279.00 (£327.83)	£279.00 (£327.83)
Jaz 2Gb			£265.00 (£311.38)	£265.00 (£311.38)	£294.00 (£345.45)	£324.00 (£380.70)

** REMOVABLE IDE REQUIRE SUITABLE INTERFACE . EXTERNAL SCSI INCLUDE SCSI 1 CABLE , SCSI II CABLE £5.00 +VAT EXTRA

MONITORS Sale now on

	Ex. VAT	Inc. VAT
14" SVGA 0.28 (3yr on-site)	£89.00	£104.58
14" SVGA 0.28 Multi-Media	£110.00	£129.25
15" SVGA 0.28 (3yr on-site)	£110.00	£129.25
15" SVGA 0.28 Multi-Media	£129.00	£151.57
17" SVGA Home Multimedia	**£150.00**	**£176.25**
17" SVGA 0.28 (3yr on-site)	**£200.00**	**£235.00**
17" SVGA 0.25 (3yr on-site)	**£300.00**	**£352.50**
17" Multisync (17" AKF50)	**£300.00**	**£352.50**
17" Iiyama Pro	£340.00	£399.50
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20" SVGA 0.28 (Special)	**£300.00**	**£352.50**
21" SVGA 0.25 (3yr on-site)	**£595.00**	**£699.13**
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21" Iiyama Pro (A102GT)	£820.00	£963.50
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AKF18/2 Multisync	**£115.00**	**£135.13**
AKF53 Multisync (14")	**£165.00**	**£193.88**
AKF50 Multi-sync (14")	**£199.00**	**£233.83**
Multisync A300/3000 cable	£8.50	£9.99

THE BEST! PRINTER PRICES

(Please ring for latest prices)

		Ex. VAT	Inc. VAT
Canon BJC80W portable col.		£159.00	£186.83
Canon BJC 250 **colour**	A4	£84.00	£98.70
Canon BJC 4300 colour#	**A4**	**£110.00**	**£129.25**
Canon BJC 4650 colour#	**A3**	**£227.00**	**£266.73**
Canon BJC 7000 colour#	**A4**	**£189.00**	**£222.08**
Epson Stylus 440 colour	A4	£115.00	£135.13
Epson Stylus 640 Colour	**A4**	**£148.00**	**£173.90**
Epson Stylus 850 Colour	A4	£230.00	£270.25
Epson Stylus 1520 Colour	A3	£499.00	£563.87
Epson Stylus photo 700 #	A4	£180.00	£211.50
Epson Stylus Photo EX #	A3	£328.00	£385.40
HP 420	**A4**	**£75.00**	**£88.13**
HP 670C Colour	A4	£99.00	£116.33
HP 690C Colour	A4	£110.00	£129.25
HP 890C Colour	A4	£217.00	£254.98
HP 895CXI Colour	A4	£225.00	£264.38
HP LASERJET 6L		**£230.00**	**£270.25**
HP LASERJET 6P		£494.00	£580.45
Photo drivers for #		**£58.72**	**£69.00**

FREE Acorn driver by request

Removable Drive Media

	Ex. VAT	Inc.VAT
100mb Zip	£8.45	£9.93
Zip 5 pack	£38.30	£45.00
120mb LS120	£7.50	£8.81
135 Syquest	£21.00	£24.68
230 Syquest	£19.90	£23.38
270 Syquest	£29.75	£34.96
650Mb Pan. PD	£19.00	£22.33
750Mb Nomai	£38.00	£44.65
1Gb Jazz	£58.00	£68.15
1.5Gb Syquest	£58.00	£68.15
CDR CD-ROM	£1.28	£1.50
CDR 10 pack	£10.00	£11.75
CDR 25 pack	£21.28	£25.00
CDR/W CDROM	£12.00	£14.10
CDR/W 10 pack	£100.00	£117.50

Interface Adapters

Storm SCSI 8 bit (A30x0 int)	£88.00	£103.40
Storm SCSI 16 bit (podule)	£96.00	£112.80
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Phoenix burns after Acorn snub

Phoenix, the unofficial name for the organised effort to create a new company out of the ashes of the recently closed Acorn Workstations division, has suffered a comprehensive clipping of its wings. For anyone hoping that Risc PC 2 or 'Phoebe' would become a product for actual sale sooner rather than later – even, some might add, ever – the news is a devastating blow. Negotiations with Acorn were apparently proceeding smoothly, with some optimism that Phoebe could be on sale by Christmas, but Acorn abruptly terminated the dialogue and appointed the new Castle Technology company, CTL, as official Acorn distributor instead.

The Phoenix aim was to acquire from Acorn all the rights to RISC OS, the current desktop products range, including NCs, plus various associated technologies and, last but not least, Phoebe. These were the primary assets Acorn had apparently decided were no longer of any worth when it announced the closure of the Acorn Workstations division in mid-September. Acorn's official statement back then even suggested that attempts to find a buyer for the division had failed, though we have yet to see any evidence that Acorn actually did try to sell the division bar a tentative approach from Eidos' founder, Stephen Streater.



The Phoenix members are mainly independent dealers and developers, with major companies represented including CJE Micros, Aleph One, Cumana, Si-Plan and many others, including Tau Press who publish *Acorn User*. As reported last month, the Phoenix group formed a steering committee and each company donated a fee of £500 each to fund an organised business like initiative to secure financing, draw up a business plan and approach Acorn with the goal of buying the products business Acorn was apparently winding up in any case. Peter Bondar, the familiar ex-Acorn director who was responsible for leading the creation of the original Risc PC as well as Phoebe, had already posed some suggestions and was elected as the group's main executive.

Through some venture capital contacts in the Netherlands, Bondar quickly found a Dutch organisation which specialised in bailing out under-performing high-tech companies and knocking them back into shape. The same organisation is credited with the recent rescue and restructuring of Tulip Computers, a major PC manufacturer in the Netherlands. Tulip's management was introduced to the plan, they showed positive interest and, to cut a long story short, we are told that Acorn's chief executive, Stan Boland and Peter Bondar agreed to formalise the proceedings through a jointly signed Memorandum of Understanding (MOU) whose aim was to provide an exclusive framework for the Phoenix delegation to prepare and present its proposals to Acorn within an agreed time period.

That agreement was signed on the afternoon of Tuesday October 6th. A few days earlier, a draft of the MOU had been mistakenly published on Acorn Cybervillage Web site, but according to our sources, Acorn's Andy Mee reassured the Phoenix committee that this had not affected the negotiations in any way. The following Friday, Tulip personnel arrived in Cambridge to meet Acorn's management and to become better acquainted with who they were dealing with. We are told that the meeting was very positive and the Tulip party was given some kit to take home and play with.

A Phoenix meeting had already been planned for the next day, Saturday October 10th and Peter Bondar reported to all present that things were going extremely well. Unfortunately, this coincided with news from Jack Lillingston that he had, at last, got his distribution deal signed and sealed. Not only that, but Lillingston collected his contract barely hours after the Tulip people had gone home. To put it mildly, there was consternation at the meeting – in the blink of an eye, Acorn had effectively torn up the MOU – but why? That's the $64,000 cliché question.

Part of the answer may lie in what happened next, although as nobody seems to agree what really happened, we can only speculate. By Monday, Tulip apparently told the Phoenix committee that they had received a fax from Acorn inviting them to negotiate a separate deal, excluding Peter Bondar and Phoenix. It was only on the Tuesday that Acorn informed Laurie van Someren, a senior Phoenix committee member, that the MOU agreement was officially dead. Acorn have since denied that they sent the said fax to Tulip, so we can't actually be sure what really happened. Nevertheless, the Phoenix members were, quite rightly angered and saddened by what had happened.

As we go to press nearly four weeks later, the news is that further discussions with Tulip and Acorn have indeed taken place, but there hasn't been any obvious progress in the negotiations and in any case, the focus has moved away from traditional desktop computers and more onto NCs and other thin client technologies. The door remains ajar for Acorn to perform another U-turn, but realistically, there is practically no chance of the original Phoenix proposal being entertained. The flight of the Phoenix was a short and bumpy one, alas.

There are other potential reasons why Phoenix failed. One obvious explanation could have been that Acorn feared losing key engineering staff to the new proposed company, even though the MOU specifically forbade staff poaching. It's perfectly reasonably to speculate that some staff would have transferred of their own accord. Another more controversial reason put forward is that there was fatal conflict of character between Stan Boland and Peter Bondar, whom he effectively caused to leave Acorn back in June, along with Acorn president, David Lee, and other key management staff.

What's not so easy to explain is how Acorn turned away from a deal which could have netted them in excess of £2 million up front in a short time-frame and instead opted for a conventional and less profitable distribution deal with Jack Lillingston. Around the time of all this controversy, Acorn was disposing of further quantities of its ARM shares, so the immediate need for cash was no longer paramount, despite rumours of a seven-figure Acorn creditor being on the verge of bankruptcy.

Now that Lillingston has been handed the reins, we hope he can achieve at least some of the goals of the Phoenix initiative. The early signs are reasonably positive, but the universal factor remains Acorn. Lillingston says he has guarantees that Acorn will manufacture computers as long as he can take them off their hands. There are technical reasons why honouring such a promise will get more and more difficult over time. In the end, of course, time will tell.



Castle Technology picks up the pieces

In the wake of the failure of the Phoenix group to succeed in its plan to re-incarnate the axed Acorn Workstations division as a new, independent, company, it has emerged that Castle Technology's Jack Lillingston formed a new company, Castle Technology Limited, or CTL for short, and this has been appointed by Acorn as official dealer distributor for Acorn desktop computing products, including Risc PCs, A7000+ models and NCs.

Lillingston revealed that he approached Acorn with regard to taking on the distribution responsibilities very soon after the shock announcement that Acorn was closing the Workstations division. It's not surprising, then, that Lillingston chose not to join the Phoenix group – members of which each had to stump up £500 towards a fund to pay former Acorn director, Peter Bondar, to head the Phoenix bid. The story of the Phoenix initiative is told in a separate article here, but it has to be said that many of those close to Phoenix saw Lillingston's negotiations with Acorn as an un-wanted distraction. After all, if he secured his bid, Phoenix would almost certainly be critically compromised and vice-versa.

To make matters more complicated, early indications from Lillingston were that there was practically no room for Phoebe in his plans. That tune has more recently changed, though Lillingston refuses to be drawn into any detail or, indeed, any commitment regarding any plans he might have for Phoebe. Instead, Lillingston says he has seen Phoebe in 'all its glory' and he's very impressed with it, but his policy is not to pre-announce anything until it's commercially ready.

Lillingston concedes that there are those in the dealer and developer community who need reassuring about his motives and plans. An intensive campaign of telephone calls around the country to reassure key people has been largely successful, says Lillingston and now that more details of the CTL set up have been revealed, it can be seen that some concerns have proved to be unfounded.

For example, CTL has been set up along the strict interpretation of the trade/channel distribution model, which means CTL will not sell to end-users in the UK. Indeed, the original Castle Technology business which specialises in peripherals but also sold computers, will now no longer sell the latter once a recent sales campaign has expired. This point should be very reassuring to dealers as some previous third-party distributors appointed by Acorn did choose to run a retail operation alongside their distribution responsibilities.

This, says Lillingston, is a sign of further positive things to come. Lillingston says he wants to succeed where Acorn's old distribution policies had gone wrong. Marketing will also be a top priority – Lillingston says he will do his best to correct the ignorance in the general computer market of the inherent advantages of the Acorn platform, like low cost of ownership and a long usable life as well as the attractions of ARM technology and RISC OS.

The Xemplar factor can't be ignored and although Xemplar readily admit that Acorn sales to schools via their agency network of dealers have fallen sharply, they reiterated to us that they will not be pulling out of the Acorn market, despite a sales announcement on the Xemplar Web site implying that they were quitting. Lillingston believes that CTL can do better than Xemplar at getting Acorn computers into schools because CTL doesn't have the distraction of having to sell Apples and PCs, plus the independent dealers CTL now serves have greater freedom than Xemplar agencies to pitch for new business.

So what of the future? Dealers continue to prove that there is a solid, if receding, market for Acorn computers, but for Lillingston to be able to sustain his new business in the long term, where will he get new products and other developments from? Although he won't be drawn on this subject, there is speculation that he has been given a guarantee from Acorn itself to deliver certain developments and highest on the list is probably RISC OS 4, originally intended just for Phoebe, for upgrading A7000s and Risc PCs.

Acorn industry figures we have spoken to remain unconvinced that Acorn itself will, in the fullness of time, actually deliver the support and commitment that Lillingston says he has negotiated with Acorn. One source pointed out that further production runs of A7000s, for example, could be hampered by the lack of a key component. Lillingston points out that Acorn has just completed a new batch of A7000s and knows of no component supply problem. What the real truth is, probably only a few really know the answer.

Of primary importance by far for Lillingston and CTL is to get the Acorn market moving again. Since Acorn's closure announcement, confidence among even the most loyal of Acorn customers has been hit hard. The failure of the Phoenix initiative simply made things worse. Naturally, for the sake of Acorn dealers, developers and fans everywhere, we hope CTL proves to be very successful.







Xemplar's 'Last chance' mistake

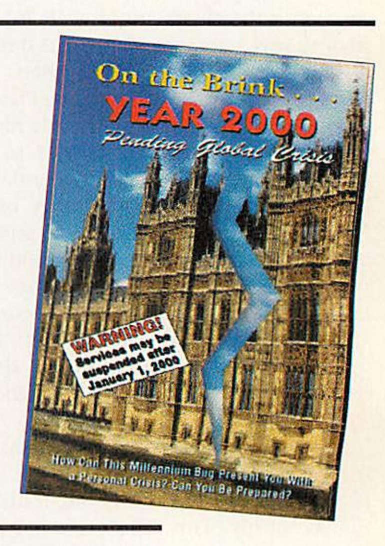
A sales promotion announcement on Xemplar's Web site in the first week of November prompted many to think that Xemplar was officially getting out of the Acorn market, but it later transpired the wording of the announcement, which included the phrase to the effect that it was the 'last chance' to secure guaranteed supplies of Acorn products from Xemplar, was simply a reminder to customers that future supplies of computers from Acorn weren't guaranteed.

XEMPLAR
EDUCATION

Head of marketing at Xemplar, Nick Evans, admitted that the wording, which he had coined, was inappropriate and it was quickly removed once alarmed queries started to come in. Xemplar boss, Brendan O'Sullivan had only a month earlier emphatically denied rumours that Xemplar was quitting the Acorn market. Evans reminded us that Acorn's stated policy is to concentrate on activities other than desktop computers, although it appears that Xemplar have been guaranteed supplies of NCs, which now form the main thrust of their Acorn-related product marketing.

It seems that no guarantees to Xemplar have been made regarding supplies of other Acorn desktop products. Evans added that they would do their best to obtain alternative sources of Acorn product, once their existing stock in the warehouse had run down. Did this include talking to Jack Lillingston's new CTL distributions company, which is now Acorn's official independent distributor? If necessary, yes, said Evans, though both he and Lillingston admitted that neither party had yet discussed this possibility to date. Xemplar also added that Acorn products would definitely be featured in the 1999 Tesco Computers for Schools catalogue.

Year 2000 video



Tau Press' sister company Powertrack has become sole UK distributor for a new video on the potential social effects of the Millennium Bug. Steve Turnbull, Managing Director of Tau Press, stated "Acorn users can be *millennium-smug* about the ability of RISC OS machines to pass through the date change without even a twitch – but thinking the bug will have no effect on their lives is, unfortunately, naive.

"Even if all important PCs and mainframes are fixed in time – fairly unlikely in itself – there are millions of embedded processors that cannot be reached or replaced and their failure could wreak havoc on society's infrastructure.

"Our video explains the problem clearly, describes the potential effects and what people can do about it on a personal basis. We believe it's crucial that everyone sees this video so that they understand exactly what is going on."

See page 14 to order the video directly from Tau Press, or the subscriptions page to get the video as a special offer at a discounted price.

Sony 200Mb floppy ships

Here's another job for parallel port RISC OS device drive whiz kids – Sony has at last started to ship the first HiFD 200Mb 'floppy disc' drive and at the same time Fuji has started shipping HiFD media. Like the already established 120Mb LS120 Superdisk which was pioneered by 3M/Imation, here we have a 3.5 inch form factor drive which can read and write ordinary 3.5 inch floppy discs as well as their own proprietary super high capacity discs.

The two big differences are that the Sony HiFD offering can read and write data much faster and it has a 200Mb capacity – a third more than the LS120. In fact the HiFD acts more like a slow hard disc than a fast floppy disc and as its sustained read capability is 600K per second, it can easily stream MPEG1 video from a HiFD disc. Fuji says the discs will sell for around a tenner each, which is about the same price as LS120 media, but





Sony expect the drive to retail for around £149 inc. VAT, which is about £25 more than the equivalent LS120 drive parallel port drive. An IDE internal version will soon follow. Sony Computer Peripherals and Components: tel: 01932 816660.



news

2100 font CD from iSV

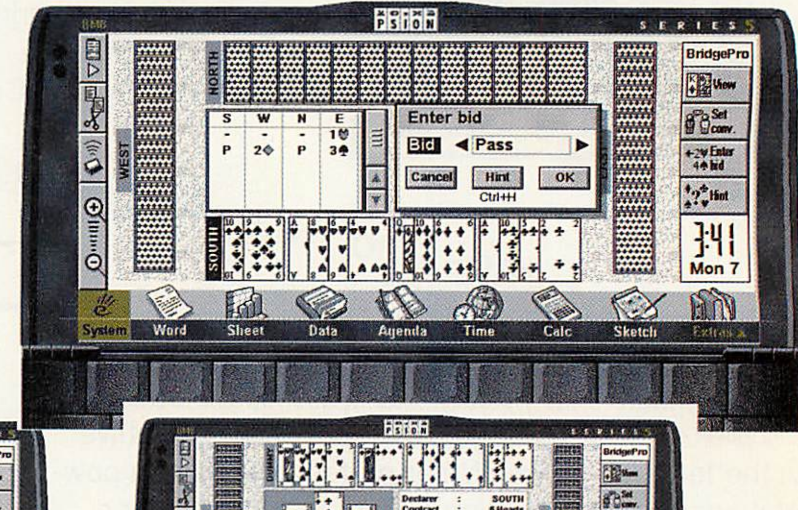
Originally scheduled for launch at the doomed Acorn World show, iSV Products has released *Professional Typography Expert 2100*.

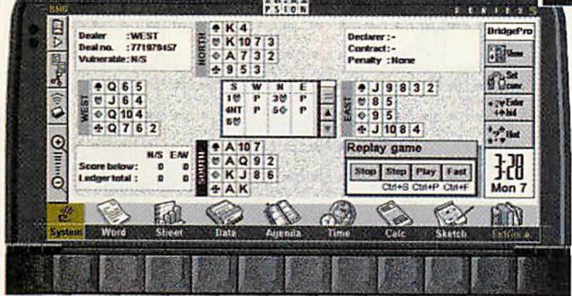
The name might be a bit of a mouthful, but you certainly seem to get lots on the CD – over 2,100 high quality fonts, hinted with iSV's own NDT (no dropout technology) hinting system. Utilities supplied include a font cataloguer, Font Designers Toolkit and FontTrixPRO.

You also get PostScript name matching. The CD is priced £30 plus carriage, or £15 plus carriage for current users of Typography Vol.1. For more information, contact iSV on tel: 01344 455769 or check out their Web site at http://members.aol.com/isvproduct/

Purple Bridge

Purple Software has announced *Bridge* for the Psion Series 5 hand held computer. Purple chairman, Julian Swallow, commented: "This new title carries all the other 'top of the line' attributes you have come to expect from Purple Software products." In other words, it's fast, has a very intuitive user interface and some neat graphics. The price is £49.95 inc. VAT. Purple: tel: 0171 387 7777, Web: http://www.purplesoft.com





Bridge is a powerful application for the Psion Series 5 and compatibles that is suitable for beginners and expert players alike.

- Superb graphical display of hands.
- A choice of board layouts, backgrounds and card backs.
- Animated moves with a choice of animation speeds.
- Incorporates a fast and powerful Bridge engine.
- Uses a natural bidding system incorporating many standard and optional conventions.
- Includes a forty-page manual on the art of bidding in electronic form.
- Search for selected contracts such as "Slams" or "Games" or create custom hands.
- Play against the computer or take control of any of the players.
- Hints available for all bids and card play.
- Take back and replay individual tricks or review the whole hand in replay mode.
- A fully annotated score card for each rubber and cumulative ledger score.
- Save and load scores and current game position.

Languages:	GB
Compatibility:	Psion Series 5 and compatibles
RRP inc. VAT:	£49.95

For more information please contact Gunnar LarsÈn:
Purple Software Limited
PO Box 7535
London NW1 2WF
England
Telephone: +44 (0)171 387 7777 extension 202
Fax: +44 (0)171 387 1188
e-mail: gunnar.larsen@purplesoft.com
web: www.purplesoft.com

Psion Series 5s at school

Xemplar is yet to be persuaded that the Psion Series 5, the ARM-powered successor to the Psion Series 3 family, which includes the Acorn Pocket Book, is suitable for classroom use, but an experiment involving the use of Series 5s at Farnborough Sixth Form College could usher the S5 in as an ideal addition to schools. Using the S5's built-in wireless infra red port, students beam files from their S5s to a network server and as each individual S5 has a unique identity it can be used to track and monitor the work and attendance of students.

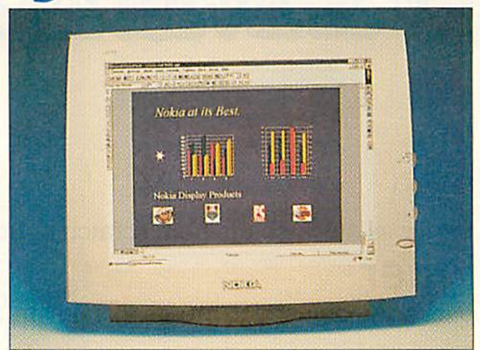
Dr John Guy, Principal of the college commented: "It represents a quantum leap in educational administration which will have applications across the globe." It's unlikely the same experiment could be repeated using S3cs or Pocket Book IIIs because although these later models have an infra red port, it's only compatible with other S3c family machines.



New short-neck monitors by Nokia

The trendy term in monitors today is 'short neck' – a reduction in the length of the part of the tube which sticks out the back and houses the electron guns. By making the tube shorter, the entire case can be less deep, meaning the monitor screen can be positioned further away if the desk faces on to a wall, or simply to save desk space. Nokia has just announced a pair of 100 degree short-neck tubed monitors, which offer the most space saving yet.

The 447XS is a 17 inch display and the 446XS a 19 inch model. The 17 inch model can display a 1280x1024 screen mode at up to a refresh rate of 80Hz, while the 19 inch version boosts the refresh rate at the same resolution to 90Hz. Although as-yet unsupported by Acorn, a powered USB hub is also provided in both models. The typical selling price for the 17 inch model is £299 and £419 for the 19 inch version, excluding VAT. Nokia's Web site is at http://www.nokia.com





Apology

In the December issue of *Acorn User* we mysteriously printed the wrong surname for Xemplar head, Brendan O'Sullivan – we apologise for this embarrassing error. If that wasn't bad enough, we got Castle Technology boss Jack Lillingston's name slightly wrong in the same issue too. Apologies all round.

Movies galore

The next issue of *Acorn User*, ironically, will profit in a way from the demise of Phoebe. Uniqueway had originally come to an agreement with Acorn to supply a number of high quality movie trailer clips to demonstrate Replay 3. Now that Phoebe is on hold, Uniqueway's Paul Middleton has offered the film trailer CD to *Acorn User* as a cover mount.

There will probably be ten or so trailers, including already released titles like *Lost in Space* and *Elizabeth* as well as forthcoming attractions including *What Dreams May Come* (Robin Williams), *Blade* (Wesley Snipes) and *Little Voice* starring Brenda Blethin and Jane Horrocks as well as a cameo appearance from Michael Caine.

The trailers range between 1 to 4.5 minutes and will definitely run on A7000+ or Risc PC machines and if there is space on the CD, smaller movies for older machines will also be included. Uniqueway, tel: 01222 464020, email: sales@uniqueway.co.uk

Competition winners

Over the past 6 months *Acorn User* has run many competitions but due to the changes we haven't released the winners' names. So here they are:

Exodus, June 1998

Chris Murray, New Milton, Hants; **M. Jones**, Chester; **Jamie Goodliffe**, Chesterfield, Derbyshire; **W. M. Groenier**, Amsterdam; **M. Robinson**, Middlesborough.

HP 690C, July 1998

A. Lowry, Chesterfield, Derbyshire

Canon BJC-7000, August 1998

Peter Davey, Slough, Berks; **J. Modern**, Catford, London.

Labtec Speakers, August 1998

W. Bayston, Sedgefield, Teesside

Olivetti JP-190, September 1998

S. Antczak, Oxted, Surrey

Blake's 7, October 1998

Helen Burke, London

New version of WimpWorks

Version 2.23 of Jaffa Software's application development tool, WimpWorks, is now available. WimpWorks allows anyone with a knowledge of BBC BASIC to produce powerful multitasking applications on any machine with RISC OS 3.10 or above. Jaffa strongly recommend that all existing users upgrade to v2.23 as there are numerous improvements, including the ability to access upgrades from the Web in future.

Upgrades to v2.23 can be obtained either via email request to: info@jaffasoft.co.uk, or by post to Jaffa Software, 28 Grange Farm Drive, Stockton, Rugby CV23 8FT The upgrade is free top existing users of WimpWorks v2.x while WimpWorks v1.x users are charged £10, there's a trade-in price from WimpBasic or WimpGEN of £15 and the full version is priced £35 – all prices inclusive.

Beebug closes retail business

Sheridan Williams, co-founder of Beebug, has announced that Beebug is to close its retail business. The shop in St. Albans was closed some time ago and now Williams, who is recovering from a chest injuries sustained in a car racing accident, has been forced to abandon most of the rest of the retail business which includes selling computers, peripherals and third party software and supplies, both from Beebug's St.Albans premises and also via mail order.

However, Beebug will retain development and support of its own software titles like *Sleuth* and *Ovation Pro* and will also strengthen its network installation and support business. Beebug magazine is unaffected by the changes with *Acorn User's* former editor, Mark Moxon, due to take over the reins for the 1999 volume. Beebug's Web site is at http://www.beebug.com

Acorn South-west Show

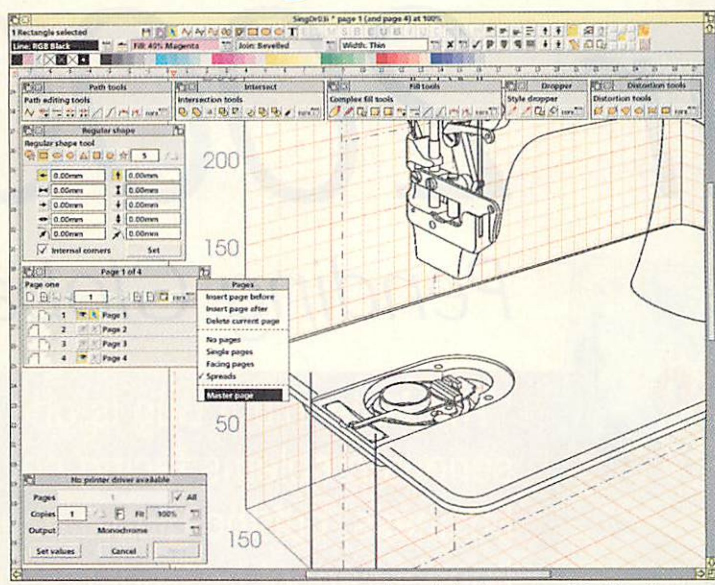
The Acorn Southwest Show will once again be taking place at The Webbington Hotel in North Somerset. The date set for the show is Saturday 20th February 1999 and attractions will include a talks, demonstration, a games arcade and a charity bring & buy stand. For more information. Point your Web browser at http://www.argonet.co.uk/sw99 or phone 01707 390410.



Cerilica Vantage

The disappearance of Computer Concepts left a gaping hole in the Acorn graphics market and despite PD plugs-ins and support for Artworks mostly from the likes of Martin Wurthner and Astute Graphics, we're in dire need of something completely new.

Fortunately the new vector drawing package from Astute Graphics is almost here: despite long-term worries caused by Acorn's plans to abandon Phoebe, the team behind the new package are far from giving up on the Acorn and have formed a new company to market and support what is now called Cerilica *Vantage*.



A few of the features of Cerilica *Vantage*

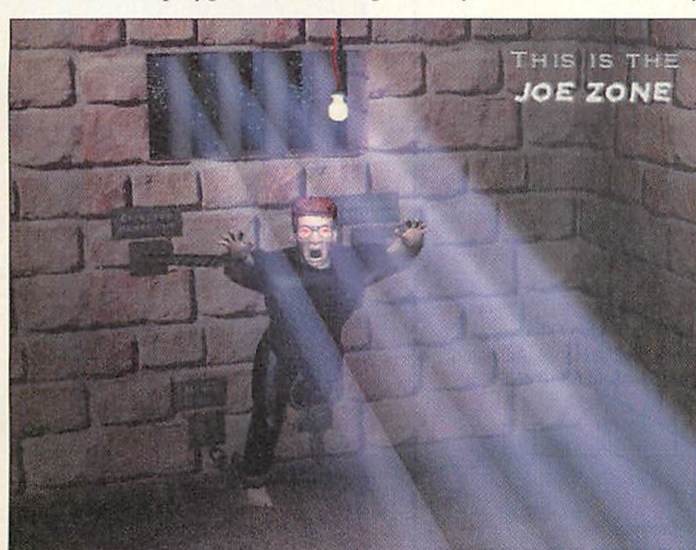
Unfortunately, the grand scheme to re-launch the Acorn graphics scene by a consortium of Spacetech, Alternative, Akalat and Cerilica at Acorn World has had to be abandoned, but with luck this won't hold back *Vantage* too much. The application is currently being finalised for a UK release at a price of £200+VAT and should also be available outside the UK via local distributers. Some foreign language versions are also expected.

Chatting to Marketing Director Nicholas van der Walle has certainly left me in an upbeat mood and I can't wait to get my hands on *Vantage* and experience a level of design capability previously unheard of on a Risc PC. Watch this space. Cerilica can be contacted on 01989 567350

Picture of the month

'Joe Zone' is an unusual *Top Model II* rendering which takes this month's £20 prize plus a copy of Phantasm from Astute Graphics or, as they are now known, Cerilica. Artist Joe Burmeister describes his work on the picture: "I built the model by starting with the head, which I made out of polygons netted together by hand. I split and added polygons till I had a face which looked like the photo I was working from.

"The glasses are every bit as simple as they look, the same with the body. The wall texture is from the *Top Model* texture CD. The other textures I made myself using *!Draw* and *!Paint*.



The light effect from the window is done by using a stretched-out rectangle on 'Add transparency'. The light bulb is as simple as it looks. The wiring is a cylinder distorted along a path."

Joe is now working with the VOTI team, so watch out for his graphics in future Acorn games. I couldn't resist including another picture on the cover disc from Joe which reveals his rather ironic sense of humour: it features a robot in a very human pose, getting down to some serious game play.

Typography

iSV has now launched a new version of its popular fonts CD. Professional Typography Expert 2100 includes all the fonts from Typography Volume 1 as well as 740 new faces and an array of tools like the Font Designer's Toolkit. Upgrading from Typography 1 costs only £10 plus carriage for a limited period.

Following the cancellation of Acorn World, iSV are also offering a range of special offers, details of which can be found on the company web site at http://members.aol.com/isvproduct/

Spacetech

Following the release of *Photodesk 3,* Spacetech have reaffirmed their commitment to the Acorn platform following the shock news from Acorn on the future of the Phoebe. Their next major releases will be CD-Rom based plug-ins for *Top Model,* including the long awaited *TopAnimation* and the very soon to be released *Top3DFont.*

Spacetech
01305 822753

Projection

Size, it seems, does matter, with yet another company boasting impressive performance from a small box size. This time it's a portable monitor projector in the form of the Impression A10 from Ask. The A10 offers 1024x768 resolution from a portable 4.9Kg at a RRP of £9,995.

Ask
0171 436 1553

Print power

Canon are launching a rather unusual seasonal offer on seven of their top printers, ranging from the entry-level BJC-250 right up to the soon to be launched dual-head BJC-500.

Under the scheme, anyone purchasing one of these printers will receive a Blockbuster Video card entitling him or her to a free video rental each week for a year.

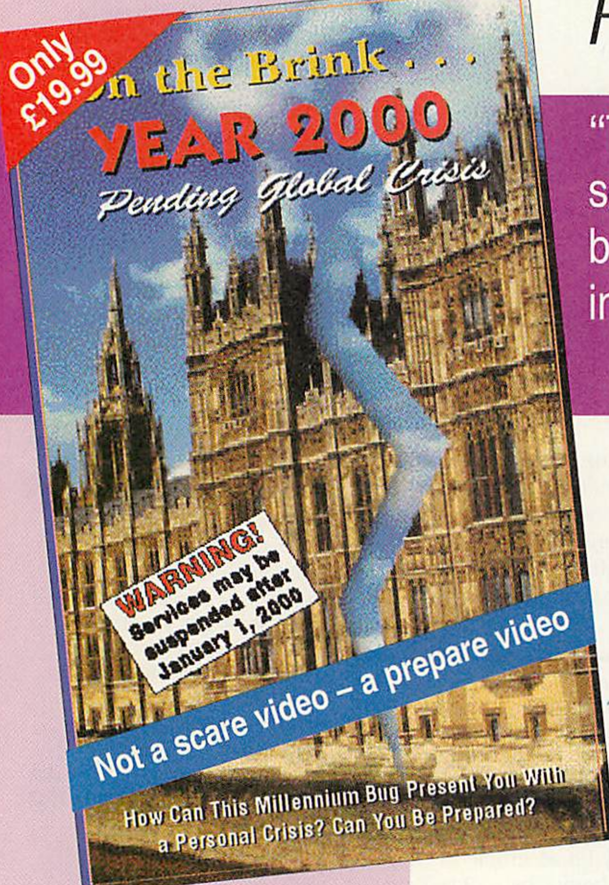
Canon
0121 666 6262

Contacting me

You can contact the Graphics page by writing to me, Paul Wheatley, at Acorn User, Tau Press, Media House, Adlington Park, Macclesfield, SK10 4NP or, preferably, emailing graphics@acornuser.com.

On the brink... Year 2000

Pending Global Crisis



"The Millennium Bug is one of the most serious problems facing not only British business, but the global economy today. Its impact cannot be underestimated."

Prime Minister Tony Blair

The Crash of the Bank of England? Collapse of the Government? Just what difficulties will the Year 2000 cause you?

The "On the brink..." video is a non-technical explanation of the potential impact of the Millennium Bug in the world's computers and what you need to do about it.

Computers have been used to make modern society livable — it's hard to see how the infrastructure of the world could be managed without the hundreds of thousands of mainframe computers, tens of millions of desktop machines and two billion embedded microprocessors.

But on the 1st January 2000 some of those machines are going to fail and the potential results could be worse than all out global war.

The "On the brink..." 60 minute video features world-leading experts on Millennium Bug solutions and provides you with an understanding of what may be to come and how you and your family can avoid the worst. And it's a video you'll watch again and again, and recommend to your friends and their families so you'll be prepared for what may come.

ORDER YOUR COPY NOW

ORDER FORM

☐ YES! Please send me ____ copies of the "On the Brink" Video at £19.99 each

☐ Add £1 P&P per video if ordering from the UK

☐ Add £1.50 P&P per video if ordering from Europe

☐ Add £3 P&P per video from Outside Europe

Value of order £__________

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Address............

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Send your order to:
"On the Brink" Video Offer,
Tau Press, Media House, Adlington Park, Macclesfield SK10 4NP.

Credit Card No: ☐☐☐☐ ☐☐☐☐ ☐☐☐☐ ☐☐☐☐

Expiry Date: ☐ / ☐

☐ Please tick here if you do not wish to receive promotional information from other companies

"Failure to deal with the problem could lead to commercial collapse. I put it bluntly because I want to get the message across. It will not respect national frontiers. Unless we act now, there will be international chaos."

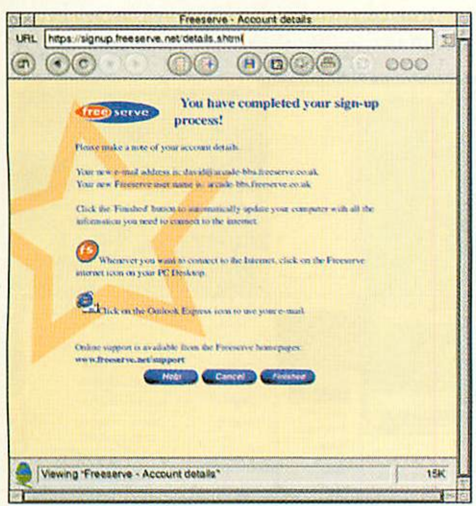
Lord Sainsbury, Government Minister of Science and Technology



Free and easy?

Freeserve from Dixons sounds too good to be true. Free Internet access, free Web Space, free infinite e-mail addresses and free Usenet news, all at local call rates. Several sources from the Usenet newsgroups have described how to sign up for Freeserve without getting the PC-only CD from a Dixons store. Could I do it myself on my Acorn Risc PC, armed with just the technical information gleaned from other experimenting users?

After a lot of fiddling and head scratching, the page pictured here shows that I was successful. I used Socketeer with Acorn Browse and the Acorn beta-test Secure Sockets Layer module. The Freeserve sign-up server prefers Internet Exploder 4, and gives an error when Browse is used. Fortunately, Matthew Hambley had posted the solution in comp.sys.acorn.networking. You simply remove "/perl" from the URL whenever the error occurs, and you can then successfully finish your application.



Arcade BBS gets 5Mb more Web space

Once the account has been created, it can be just as easily accessed from an Acorn machine. I used Socketeer again with the Acorn PPP module and PAP authorisation. For detailed information on how to do this, try Paul Vigay's RISC OS Internet Connectivity Web site for ANT Suite users at http://www.matrix.clara.net/Acorn/inet.html, or Richard Siggee's 'Freeserve on Acorn' page for Socketeer at http://www.siggee.freeserve.co.uk/

To open your free 5Mb Web site, you log into their FTP server at uploads.webspace.freeserve.net/ using one of the Freeware FTP clients. This automatically generates a default index page which you can replace with your own HTML creation. The Webspace FTPserver wouldn't let me create directories for image files, so be aware of this when testing a site on your own machine.

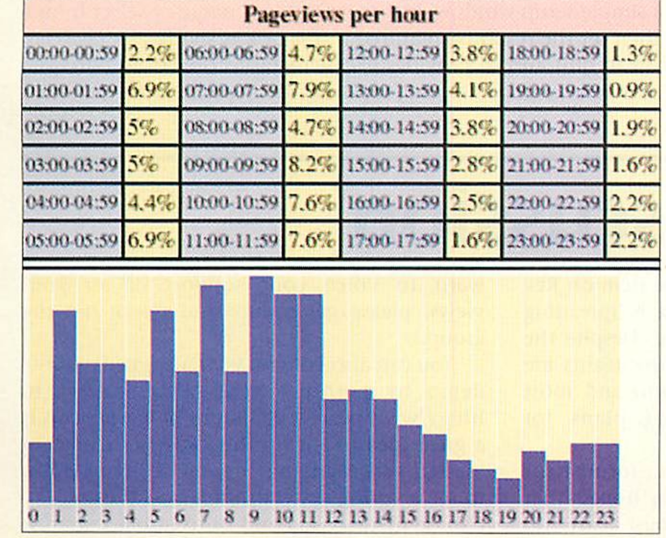
Freeserve Web sites seem interference-free at the moment, but will they make use of the demographic information given at signup? I'd keep hold of a paid subscription to an ISP for the time being, because in this world you usually get what you pay for. Having said that, the Freeserve technical support line costs £1 per minute at all times, so it'd better be good.

All the hits and more

Everything you've always wanted to know about your Web site, but didn't want to pay for. That's the free service offered by NedStat UK (http://uk.nedstat.net/) a website tracking service run by Compass Interactive BV of the Netherlands – yes, that's where the Ned bit comes from. Providing your Web site receives less than 10,000 hits a day, their services are free.

Just by retrieving their little icon onto your index page, you can have charts galore (like the example here) generated from information gathered by the NedStat UK server, showing number of hits per hour, hits per day, where the visitors come from, and so on.

To see the charts and diagrams, you click on the above-mentioned icon which takes you to your own NedStat information page. There's no numeric counter, as the full stats offer much more information. NedStat don't mention that visitors with image-loading switched off or with Lynx text-only browsers will not register hits, but you can't win 'em all.



Pageviews per hour

00:00-00:59	2.2%	06:00-06:59	4.7%	12:00-12:59	3.8%	18:00-18:59	1.3%
01:00-01:59	6.9%	07:00-07:59	7.9%	13:00-13:59	4.1%	19:00-19:59	0.9%
02:00-02:59	5%	08:00-08:59	4.7%	14:00-14:59	3.8%	20:00-20:59	1.9%
03:00-03:59	5%	09:00-09:59	8.2%	15:00-15:59	2.8%	21:00-21:59	1.6%
04:00-04:59	4.4%	10:00-10:59	7.6%	16:00-16:59	2.5%	22:00-22:59	2.2%
05:00-05:59	6.9%	11:00-11:59	7.6%	17:00-17:59	1.6%	23:00-23:59	2.2%

Mornings are electric, apparently

Ticker Clicker

!Ticker, written for Acorn 32-bit machines by Garan Jenkin, is an application which fetches news headlines from the BBC's online news server and scrolls them across the top of the screen. When an item is clicked on, the full story is fetched by your web browser. *Ticker* requires an established dial-up or Ethernet Internet connection, and can be set to use a proxy server. Other user settings adjust size, speed and position of the banner, and choice of low-graphics pages to speed up fetching. *Ticker* has to be the most ingenious freeware Acorn program of the year.

!Ticker
http://www.geocities.com/Paris/Lights/7724/

Spuddy hanging up?

Stephen Harris, sysop for the last four years of Spud's *Xanadu,* affectionately known as Spuddy, has announced that the system will soon be closing. Spuddy is a Sun network dedicated to the provision of free mail and Usenet service for the UK for the last eight years, and gave users free access to a full Unix shell and to a friendly BBS. Stephen points out that their original aim of free access has now been fulfilled by Dixons' *Freeserve* and others, and adds that running Spuddy has been a satisfying experience. You can wish him well by mailing sweh@spuddy.mew.co.uk, and see what you've just missed at their Web site.

Spud's Xanadu
http://www.spuddy.org/

V.90 ratified

The International Telecommunications Union in Geneva has now given final approval to the 56kbps modem standard known as V.90. Agreed on earlier this year and supported by both Rockwell and 3Com, the ratification is expected to restore customer confidence after confusion over the two previously competing systems. However vendors who had cut prices due to buyer caution do not now expect to regain their hoped-for profit margins. Incredibly we're still waiting for the V.90 UK Flash upgrade for our US Robotics Couriers.

Contacting me

Keep sending me interesting URLs for the next yoUR List by e-mail to david@arcade.demon.co.uk, or mail #2 on Arcade BBS 0181 654 2212.

public domain

There is hope

Despite the sad news from Acorn of the Phoebe's demise, the PD page rolls on as usual and, as you can see, this month's is packed with releases and utility updates. It's almost as if each author is doing his bit to give encouragement to the RPCII rescue plan. One word of advice – don't stop. The Public Domain has always been such a personal and friendly market and has played such an important part over the years that we can't give up now.

StrongARM Patch

Jan de Boer has constructed a rather nifty program to patch the StrongARM and deal with some of those niggling compatibility problems. Pcr13 changes SWI's that some programs construct on the stack into inline OS_CallASWI instructions. The effect of this is to patch programs like 65Host and Interdictor II. Pcr13 is on Jan's web site at http://home.worldonline.nl/~jandboer

AcornSite

AcornSite has been updated this month with an array of additions to what was already a wonderful PD links site. There's now a free ads page, support for Web page updates, a 'recent changes' page and a 'site of the month' displaying which link got the most votes. Check out Acorn site at http://www.visitweb.com/acornsite

Acorn Emulation Page

David Sharp's emulation Web page – which I simply can't praise enough – is launching a two-stage emulation competition. As David explains "The competition is free to all who wish to enter, with the prizes of a copy of the excellent 6502Em and Z80Em, the commercial Acorn 8 bit and Spectrum emulators, kindly donated by Warm Silence Software."

Check out the excellent Web site at http://www.cybervillage.co.uk/acorn/emulation/competition/ Emulation on the Acorn is simply thriving, and it's great to have such a valuable news and links site for the scene.

Recommended PD Libraries

- APDL, 39 Knighton Park Rd, Sydenham, London SE26 5RN
- ARM Club PD Library, Freepost ND6573, London N12 0BR
- Five Star Marketing, 4 Shepherds Walk, Bushey, Hertfordshire WD2 1LZ

Stunt Racing

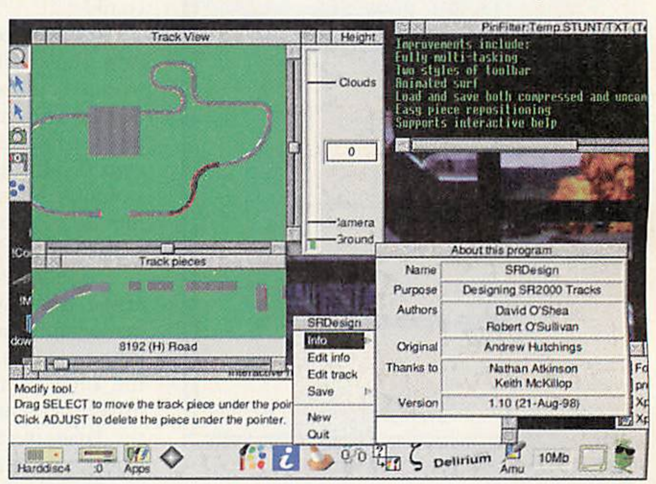
Back in the days of the ARM3 there were several crucial multi-player games you just had to own on an Acorn. As everyone knows, playability was (and still is) the key and several of these games combined great game play with the long lasting bonus of multi-player support. *Spheres of Chaos* and *Chocks Away* were both very popular, but the third favourite was always *Stunt Racer 2000*.

A classic game from a classic era, it's had new life breathed into its dated 16 colour body with an excellent PD release from David O'Shea, Robert Sullivan and the original main man behind the Fednet name, Andrew Hutchings. *SRDesign* is a desktop editor for Stunt Racer. The program allows you to create and edit your own Stunt Racer tracks.

I'd been meaning to review the first PD release of the Stunt Racer editor for some time but I'd never quite got round to grappling with the interface in order to do it properly. This latest release brings it right up to speed with a desktop implementation that's just too good to ignore. The main window consists of of three panes: The plan view of your course, a height window and a set of track pieces – basically, it's a construction kit. Drag the height meter to the level where you want to add objects, select from the bottom window the piece you want to add, and click in the main window at the point where you want it to appear. You can zoom in, edit by dragging track pieces and delete pieces with a simple click of Adjust. A clear and simple toolbar makes for very easy direct access to the main editor functions.

There are one or two niggles like the edit window being too small (please make this scalable, guys!) and the way objects pop to the side when you drag them, but on the whole this is a massive improvement over the original editor. Full marks to the team of programmers as well as VOTI manager Nathan Atkinson for getting everyone working together.

You can download *SRDesign* from http://ocean.ucc.ie/99/oshea/acorn/srdesign.html



Police action

LookOut is a useful and interesting utility which was originally written as a memory manager but has now been extended to perform policing functions in an educational environment. After loading, *LookOut* hides on your machine and monitors tasks starting up on the desktop. If it spots an "illegal" task, it can then display a warning to the user and, optionally, terminate the offending program.

Configuring can be done via a simple setup window. Just enter the task name or select from a list of currently executing tasks, then set the response required if this task is spotted by *LookOut*. The program is reasonably difficult to quit and so provides excellent protection from outlawed programs, perhaps on a school network. *LookOut* can be found on the September 98 subs disk from APDL.

Demo discussion

As you'll have gathered from the item on Rev 98, a new spirit of cooperation is spreading through the demo coding scene. Despite the recent bad news from Acorn, the teams are 100% committed to the platform and most teams are already considering plans for another competition next year.

Newsgroups are an ideal forum for discussing these events and it's hoped that the alt.acorn.demos newsgroup can do the job. If you're interested in the scene and want to voice your support or air your views, please get online and check out the group.

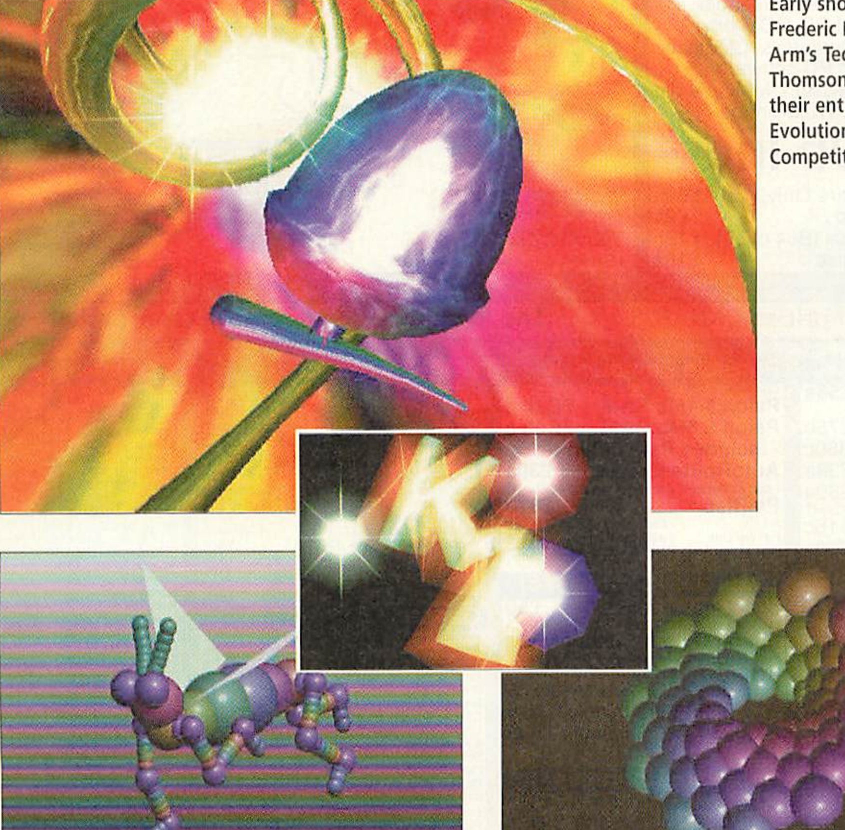
You can also vote for your all-time favourite demo by pointing your Web browser to http://www.ndirect.co.uk/~mrdalliard/. This is a great idea to stir up the 'old versus new' or 'design versus coding' arguments, but I'd like to see a voting system that allows the voter to choose first, second and third rather than just one favourite.



Evolution hits Rev 98

As mentioned last month, the future of the Rev 98 demo competition was put into serious doubt after the shock news from Acorn left the contest without a prize or a venue. Fortunately a rescue plan has been formulated, and the competition will be going ahead. Discussion between the main entrants and support from the PD Page has led to the announcement of a new-look competition held in cooperation with *Acorn User*.

The new competition, entitled Evolution, will no longer be a party event but will be linked with a special demo issue of the magazine. All demo's entered by 1st December will appear on a special cover CD, accompanied by all sorts of demo information and interviews in the magazine. There will also be a voting form, so that readers can choose their favourite production and enter a prize draw. Anyone interested in entering or sponsoring the event can contact me for more information here at the PD Page, and further information can be found on the Acorn Arcade web site at http://www.acornarcade.com/ More news soon.



Early shots from Frederic Elisei of Arm's Tech and Paul Thomson of DFI of their entries for the Evolution Demo Competition

Utility roundup

The pointer-hiding module in Zap had to be removed after it was found to crash on the StrongARM. Matthew Webster provides a nice little module that does the same task but better. *HideMows* does just what the badly spelt title says. If you do any typing, the pointer is hidden from view so it doesn't get in the way. The new feature is that *HideMows* brings back the pointer after a user defined delay. Crisp.

BarHide simulates a feature of the latest window manager by bringing the iconbar to the front of the screen if the mouse pointer is held at the bottom of the screen. Very handy for use in a cluttered desktop for those people who don't have the latest machines. Both *HideMows* and *BarHide* can be found with an array of other utilities on Arcade BBS.

Ticker is a little application that fetches news information from BBC News Online on the Internet and scrolls it across your desktop. As author Garan explains "The stories come directly from the BBC WWW server, which is updated regularly. Each item of news can be clicked on to open the full story in your Web browser. It is fully configurable to allow you to view only the headlines in which you are interested."

Download Ticker from http://www.geocities.com/Paris/Lights/7724/ticker.zip

FSI Batch

FSI Batch, mentioned previously on the PD Page has now reached version 2.2 with a number of bug fixes and feature additions including the ability to lock the aspect ratio of output sprites. Check http://www.argonet.co.uk/users/tudor

Relics

Despite being quiet for many months, renowned demo crew The Xperience are still on the scene, despite having no plans for a new demo at this time. Fortunately, all is not lost for TXP fans as the group have just released an archive of source code from previous demos *Blu*, *Phonology* and *Xcentric*.

Unfortunately there's a problem with the release archive, but that should have been remedied by the time you read this. Demo source code is a great resource for new coders to learn the tricks of the trade, so point your browser to the TXP site at http://www.stud.uni-hannover.de/~bcl/Xperience and check out the source. Full marks to the team for making this valuable release!

TempDir

Quantum Software have updated *TempDir* which is now at version 1.28 and is freely available for download by registered users. As Stuart explains "The latest update allows the user to determine the format of the dated directory themselves, including producing ISO 8601 dated directories. This new ability also has the side effect of allowing the user to set *!TempDir* to produce a set of daily, weekly or monthly directories if they so wish." Excellent stuff.

Point your browser to the QS Web site for further information, http://acorn.cybervillage.co.uk/qs/

Squeak

Version 2.2 of Squeak, the PD Smalltalk system is now available on the web at http://sumeru.stanford.edu/tim. As Tim explains "Smalltalk is the original object-oriented programming language and environment from which most OS's have learnt about windowing, pixel displays, menus and so on." I've not had chance to try out the system at the time of writing but it does sound rather interesting. More info as it comes.

Contacting me

You can contact the PD Page by writing to me, Paul Wheatley, at Acorn User, Tau Press, Media House, Adlington Park, Macclesfield, SK10 4NP. Or preferably, by e-mail to pdpage@acornuser.com

Showroom open Mon-Sat 10-18.00 hrs (All prices INCLUDE VAT) Carriage not included

RiscOS Computer Systems

1yr warr. **Carriage included on computers.** All machines are single slice. Backplane fitted to 10M/34M RiscPC only.

233MHz StrongARM now fitted to all RiscPC Computers.

Computer Model with	14" (Samsung)	17"(VMastr)	No Monitor
Acorn NC 16MB(10BaseT) with Mse/Keybd	£460	£710	£340
A7000+ NET (10Base2/T Ethernet)	£780	£1040	£670
A7000+ 8MHD1.2Gb	£850	£1100	£730
A7000+ 8MHD1.2Gb+32xCD	£910	£1160	£790
RiscPC SA233 4MHD1.2+8xCD (SRP21)	£1065	£1285	£945
RiscPC SA233 10MHD1.2+24xCD (SRP26)	£1235	£1485	£1115
RiscPC J233 34MHD1.7+24xCD (SRP41)	£1370	£1620	£1250

RiscPC J233 includes the Acorn J233 Internet software pack comprising !Browse, RisCafe JAVA & OmniClient II

Add £40 to 14" (Samsung) prices for Samsung 15" Monitor instead.
Add £20 to 17" prices for VisionMasterPro instead of VisionMaster

3Com ISDN LAN Modem £335c

Connect up to 4* computers² to the Internet with just ONE single ISDN dial-up³ internet account!

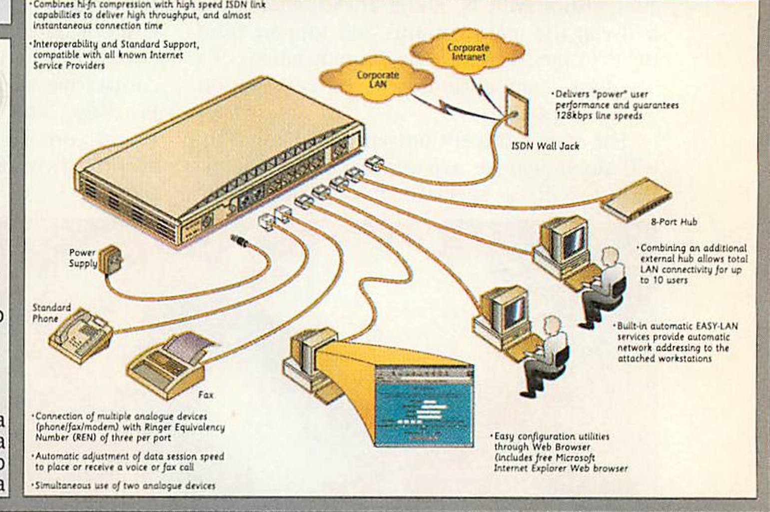
This amazingly easy to use unit is suitable for RiscOS, PC, Mac & Unix computers and compatible with BT ISDN/HomeHighway services. It provides;

- 128kbps Multilink PPP ISDN with compression & PAP/CHAP security.
- A FOUR* port 10BaseT Hub for networking to each computer².
- TWO analogue telephone ports for standard telephones, faxes & modems.
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Ring us now for further information.

* - Expandable to support up to 10 Computers. ¹ - A JavaScript enabled Web browser is required for access to Web Server. ² - Each connected computer must be equipped with a 10BaseT network card. ³ - ISDN line and ISP account not included. NOTE - PSU, Network cabling for ONE computer and ISDN Cabling is included with the unit.

The All-in-one Communications Tool for Small Business Internet Access and LAN Services



JazZip Tools £10a

(free if purchased with drive)

JazZip provides you with a complete set of RiscOS tools for Jaz/Zip drives which are equivalent to those provided with the PC DOS utilities that are provided with Iomega drives. Requires a driver for parallel use. Features include;

- Standard password protection of discs.
- Lock/unlock zip/jaz discs with/without passwords
- Unlock zip/jaz discs until next ejected from drive.
- Low Level format zip/jaz discs.
- Initialise zip/jaz discs for RiscOS or DOS.
- Unprotect the Tools disc

New Software Releases

Abuse for RiscPC/A7000 £23a
- 8Mb RAM, 10Mb HD space, VGA

Ankh for RiscOS £23a
- RiscOS >=3.1 with 4Mb RAM, VGA & CD-ROM

Descent for RiscOS £28a
- RiscPC with 8Mb RAM & CD-ROM (SA pref'd)

DOOM Trilogy for RiscOS £30a
- A5000 - RiscPC with 8Mb RAM & CD-ROM

Frak for RiscPC/A7000 £14a

CD-RW & CDBlaze



Yamaha CRW4260t
Recordable & Re-Writeable Internal SCSI CD-ROM drive complete with Cumana's !CDBlaze, cables and PC software.
Supports multi-session, MMC, Audio Modes 1 & 2, Write-on-the-Fly

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!CDBlaze (Software Only)	£89a
650Mb CD-R disc	£2a
650Mb CD-R discs (Box of 10)	£19b
650Mb CD-RW disc	£18a

Mail Order - 0161-474 0778 (All prices INCLUDE VAT) The lowest prices without compromise

Monitors (Carriage £10)

Older computers will require an adaptor £12

Samsung 14" Monitor £120
FST, 0.28" dp, 1024x768, 30-54kHz & pre-sets.

Samsung 15" Monitor £160
High spec FST Tube with 0.28" dot pitch

Ilyama VisionMaster 17" £370
High spec FST Tube with 0.26" dot pitch

Ily VisionMaster Pro 17" £390
Very High spec Diamondtron tube, 0.25" stripe

Memory

Following prices strictly whilst stocks last.

RiscPC/A7000 SIMMS

16Mb	£20a	32Mb	£35a
		High clearance add £5	
64Mb	£110a	128Mb	£Calla

RiscPC VRAM

1Mb 2nd user	£35a	2Mb	£79a

Call for details of memory for other models.

Hard Drives/Interfaces+

Carriage: a=£2, b=£6, c=£8

Hard Drives

Quantum 3.2Gb IDE	£120b
Quantum 6.4 Gb IDE	£160b
Cheetah 4.5Gb SCSI	£520c

10,000rpm Cheetah drives useful for VideoDsk

Simtec IDE Interface £55a
Supports up to 4 AT devices including Hard Drives, CD-ROM drives and zip drives. Add £15 for A3000-A4000 version.

Cumana SCSI II Card £165b

CD-ROM Drives

Internal CD-ROM Drives

Toshiba 32xCD **ATAPI**	£75c
Toshiba 32x CD **SCSI**	£100c
Cable & Fitting Kit	£10a

Compatible with RiscOS 3.60 or greater.

External CD-ROM Drives

Panas'c 32xCD **ATAPI**	£135c
Toshiba 32x CD **SCSI**	£160c

External Drives require a suitable Data cable.

I³ Networking (Carr. £6)

A30X0 EtherLan 102	£130
Archi EtherLan 514	£130
RPC/A7k EtherLan 601	£110
RPC/A7k EtherLan 602	£120

Add £15 to above prices for Access+.

RiscPC Upgrades

RiscOS 3.70 Upgrade £58a
- **Above is suitable for RiscPC's only.**

233MHz StrongARM	£275b
586-133 PC Card (512kb)	£360c
PC Pro v2(without PCExchange)	£38a
Windows '95 CD (Full)	£80a

Can be installed without any prev PCOS pres't

2nd Slice with PSU	£116c
2nd Slice without PSU	£90c
YES 16 bit Mozart Card	£70a

Printers (Carriage £8)

Canon BJC-4300	£125
Canon BJC-4650 (A3)	£Call
BJC-7000 (1200x600dpi)	£250
Epson 640 (1440x720dpi)	£185
Epson Photo 700 (A4)	£220
Epson Photo EX (A3)	£385
Epson 850 (1440x720dpi)	£280
HP LaserJets 6L (6ppm)	£285
HP LaserJets 6P (8ppm)	£585

Zip/Jaz Drives

Include Our JazZip tools
- £10 if purchased separately

Int SCSI zip drive	£115c
Ext SCSI zip drive	£105c
Ext Parallel zip drive	£105c

- add £29 for RiscOS Parallel Driver

100Mb zip cartridge	£11a
Pk of 6 zip discs+caddy	£55b
Int Jaz 1Gb £220/2Gb	£295c
External 2Gb Jaz	£305c
Jaz cartr. 1Gb £68/2Gb	£73a

Carriage: a = £2, b = £6, c = £8, d = £10

Modems (Carriage £8)

Budget 56kVoice (Flash)	£75
Pace 56k Voice (Flash)	£135
Pace 56k Solo (Flash)	£185

- The Solo modem can save fax & voice
- messages without a computer attached!

ANT Internet Suite II	£110a
Dual Serial Card	£104b

9-25 Archi or PC Wired Modem Cable £12ea.a
3-way Serial T-Switch (incl. comm. cable) £32b

Portable Computers

Carriage: a=£2, b=£6, c=£8

Psion 5 4Mb RAM £Call c
Psion 5 8Mb RAM £Call c
- includes PsiWin Link
AutoRoute Express £30a
- one of the best packages for the PB/3a
PsiRisc £67a

A-Link	£59a		
Parallel Link	£34a	PsiWin PC Link	£80b
3/3a Mains Adap.	£18a	5 Mains Adaptor	£20b

Scanners (Carriage £8)

ScanLight Video 256 £50
- suitable for A3000-A4000 (Only Two left)

Epson Colour Scanners
Include !TWAIN & ImageMaster for RiscOS. Bundles include software for PC's/PC Cards

GTx-5500 SCSI bundle	£265
GTx-9500 Para bundle	£615
GTx-9500 SCSI bundle	£645

Hardware Upgrades

DMI50 Dual Midi Card	£138b
DMI50XGS Midi/Synth	£335b
Dual Serial Card	£104b
FPA for 25MHz ARM3	£67a
Joystick I/F (Not RiscPC)	£20a
Logitech Mouse (Acorn)	£29a
Midi Max II Card	£95b
Movie Magic (1 only)	£75b
- Includes two VideoCD films	
RiscTV Card (Irlam)	£280b
- with Keying Module (1only)	
RiscTV Teletext option	£40a
Scart Cable (9 or 15 pin)	£12a
Serial Upgrade (A3000)	£27a
100W Stereo Speakers	£20c

Books (No VAT)

Carriage: a=£2, b=£6, c=£8,

Acorn RISCOS3 PRM's	£99.95c
Acorn Volume 5a PRM	£29.75c
Acorn BBC Basic VI Guide	£19.95b
Acorn RiscPC Tech Ref Manual	£49.95c
Budget DTP (Dabs)	£5.00a
'C' A Dabhand Guide (Dabs)	£5.00b
RiscOS 3 First Steps (Dabs)	£5.00a
Wimp Programming for All (Beebug)	£10.95a

CD-ROM Software

RisCafe (JAVA)	**£36.00a**
ArtWorks on CD (CC)	£105b
ClipArt CD 1/2 (CC)	£21a each
Descent (RiscPC 8Mb)	**£28a**
Doom Trilogy (RiscPC only)	**£30a**
Dune II (Eclipse)	£32a
Hutchinsons Encyclopedia 92 for RiscOS	£10a
Hutchinsons Encyclopedia 97 for PC only	£5a
Musical Instruments (MS)	£50a
RiscDisc Vol 1, 2 or 3 CD	£12a each
The Way Things Work (DK)	£50a
TopicArtCD (DTP)	£5a
TOTS TV CD	£19a
Typography Font CD	£30a
Ultimate Human Body (DK)	£50a

Games (Carriage £2)

Prices below whilst stocks last

Abuse	**£23a**
Alone in the Dark (Krisalis)	£32a
Birds of War (4D) 2Mb	£25a
B H P (TBA)	£28a
Break 147/Superpool (4D)	£18a
Chocks Compendium (4D)	£18a
Crystal Maze (Sher) Floppy £28 / CD	£28a
Cyber Chess (4D)	£16a
Drifter (4D)	£18a
Dungeon (4D)	£18a
Dune II (floppy) (Eclipse)	£27a
E-Type II (4D)	£18a
Fire & Ice (Times Warner)	£23a
Frak	£14a
Krisalis Collection	£28a
Lotus Turbo Chall2 (Kris)	£26a
Magic Pockets (Reneg)	£22a
Real McCoy 2/3/4/5 (4D)	£18a each
Saloon Cars Deluxe (4D)	£18a
Scrabble (US Gold)	£26a
Simon the Sorcerer 2Mb	£27a
Spobbleoid Fantasy (4D)	£18a
Stunt Racer 2000 (4D)	£18a
Syndicate+	**£25a**
Virtual Golf (4D) 2Mb	£18a
Wolfenstein 3D	**£5a**

- Now compatible with RiscPC+StrongARM

Printer Consumables

Carriage: £2 for Cartridges, £8 for Toner

BJ-10 (BC-01)	£16	BJ-300 (BJI-642)	£14
BJ-210 (BC-05)	£25	BJC7000 (BJ-60)	£25
BJ-200 (BC-02)	£16	BJC7000 (BJI-61)	£18
BJ-240 (BC-06)	£Call	BJC7000 (BJI-62)	£27
BJC-600 Series			
BJI-201HCbk Black	£9	**BJC-4000 Series**	
BJI-201bk Black	£6	BCI-21Bk Black	£8
BJI-201C/M/Y	£8 ea.	BCI-21C Colour	£15
BJC-800		BC-20 Fast Black	£23
BJI-643 Black	£18	BC-21 Cartridge	£32
BJI-643C/M/Y	£23 ea.	BC-22 Photo Cart	£39
HP DeskJets-500 ser.		**HP DeskJets 600 ser.**	
Mono	£21	Mono	£22
Colour	£23	Colour	£25
Eps Stylus Black	£14	Eps Stylus II Black	£19
Eps Stylus Colour	£23	Eps Stylus II Col'r	£24
Laser Toner		C3903A (LJ5P)	£64
EP-L (LBP-4)	£64	HP92274A (LJ4L)	£54

Applications

ANT Int. Suite	£110a	ArcFax	£31a
ArtWorks (CC)	£104b	Card Shop	£23a
Compression	£31a	DataPower2	£165b
Disc Rescue 2	£43a	DrawWorks Des	£27a
Eureka v3	£105b	FastSpool+	£18a
FireWorkz Pro	£165b	Font FX 6	£30a
HTML Edit 3	£47a	ImageFS2	£43a
Impression Style	£83b	Impr. Publisher	£136b
MacFS	£105a	MacFS Lite (CC)	£51a
MidiWorks Light	£30a	MovieFS	£29a
Mr Clippy (iSV)	£19a	PC Pro v2	£38a
PC Pro v2 + Exch	£46a	Personal Acc'ts	£45a
PhotoDesk Light	£129b	PsiRisc	£67a
Sibelius 6	£100b	Sibelius 7 Stud	£349b
Sibelius 7	£699b	SparkFS	£24a
StrongGuard	£24a	Web Design T'kit	£28a
X-Stich2	£28a	Win95FS	£39a

Educational (Carr. £2)

10/10 Series £14a each
Early Essentials (over 7), English (6-16yrs), French (8-16yrs), Junior Essentials (5-11), Maths (Number) (6-16), Maths (Algebra) (6-16), Maths (Statistics) (6-16), Maths (Geom'y) (6-16), Spelling (over 9), Essential IT, Geog.,

Fun School 3 (under 5, 5-7, or over 7)	£22a
Fun School 4 (under 5, 5-7, or over 7)	£22a
Maths Circus (4Mation)	£28a
Playdays (Gamesware)	£24a
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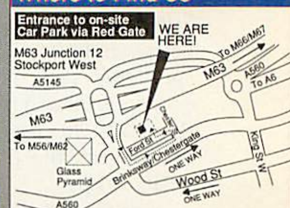
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DELTA





Xmas



pc column

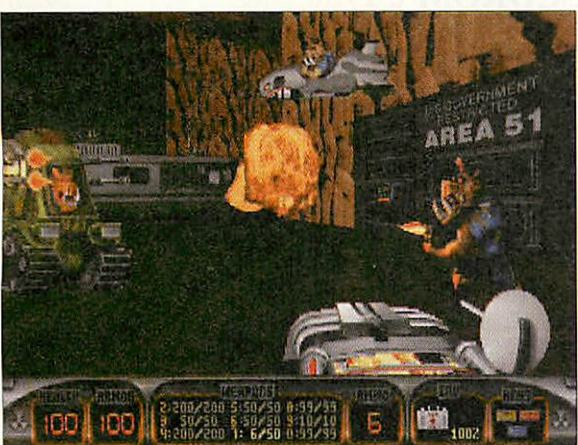
PCPro 3 delivers significant benefits


Sentinel Returns: Recognise this game?

The latest version of PCPro has at last plugged some big gaps in the support for PC card software – notably the provision of VESA and Direct Draw support. The most obvious area to be enhanced is games – many simply would not run before, or were forced to operate in an inferior and slower manner. Having said that, I have also noticed the odd piece of ordinary software that fell over because of the lack of support for direct draw – I seem to recall some educational CDs at last year's BETT that looked interesting but failed to run.

So what games do now run? I do not pretend to offer an exhaustive list, but these packages and the tips needed to get them running may inspire you to try your favourite:

Duke Nukem 3D did run on previous versions but was painfully slow. Now I'm told it's around 5 times faster and achieves a reasonable 15 frames per second using VESA 2 mode at 320x400 resolution.



Duke Nuken: Now running much faster

Sentinel Returns now works happily under Direct Draw provided you don't demand too much detail. *Descent* and the DOS version of *Red Alert* both benefit from a speed improvement as will the Mega Drive emulator *Genecyst*. In fact any game running at 320x200x8bit should run faster provided you set the fast video option on.

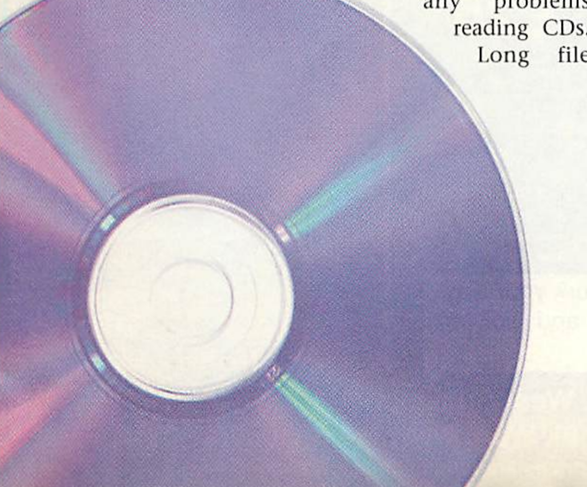
Direct X support isn't ready yet, but there's still hope for that too.

Remember that the built-in support for sound is adequate for most basic purposes but not up to running many games – some will simply crash if you try to use it. So if you are having sound problems, you might consider improving your system with PCSound Pro. Links to that, and other useful bits of software, plus information on the new PCPro3, can be found on Aleph1's site at www.aleph1.co.uk .

It may be worth a reminder that there is a games list at www.acorn-gaming.org.uk/PC/ but thus far it hasn't been updated to recognise the recent improvements in PCPro. On the other hand I guess if you discover some new possibilities that would interest others, log on and let them know.

CDs – better now

I had an e-mail the other day from a reader who wanted to know about CDs – he was under the impression that they very often didn't work properly under *!PC*. Well I'm glad to report that any problems we have laboured under in the past are now history. It's sometimes hard to remember what was wrong, but I do recall that enhancements of Win 95 such as being able to handle long filenames on PC CDs aimed at Win95 users did cause problems. But in recent months I've not had any problems reading CDs. Long file names are now supported and even Win95 only discs such as Britannica run reliably.



I did run into a problem with a new SCSI CD-ROM drive that appeared to think it was in fact seven drives and gave me a screen full of icons that all worked. Impressive to look at but hardly helpful. I'm glad to say that the author of the SCSI miniport driver, Andreas Walter, was extremely helpful and provided a patch that cured the problem by ignoring any duplicate reports. Come to think of it I'm not sure if this patch has made it into the software on general release but if you have this problem contact me and I'll sort out a solution with Andreas.

It might also be worth noting at this point that the new *PCPro* has an enhanced facility to set up SCSI devices. This allows you to set any SCSI device as 'ignored', 'reserve' or 'reserve forced'. It can be worth playing with these settings to ensure your SCSI device is behaving as desired. For example, I use different configurations with or without access to a SCSI drive. It's not enough to set the number of drives simply to one or two. You must also set the SCSI config for the single drive system to 'ignore' the second (SCSI) drive or it will appear anyway.

Phoebe

I had expected to fill this months column with the latest on the chances of support for PC cards inside Phoebe. But with Phoebe (at the time of writing) dead if not yet completely buried, that has clearly been shelved too. I can only hope that something will come of the current discussions and that Phoebe with all its promise will be resurrected. Perhaps if that happens it should be called Phoenix.

Finally, it occurs to me that with the (hopefully temporary) loss of Phoebe, will mean that our reliance on the existing PCPro/PC card system will certainly continue for a while yet. So, what help do you need to run your cards ar maximum efficiency? Why not write in and I'll do my best to provide some intelligent and useful answers.

Contacting me

You can contact me, Mike Buckingham, by post at: Acorn User, Media House, Adlington Park, Macclesfield SK10 4NP or by dropping me an e-mail at: pcpage@acornuser.com

music



Music for our ears?

After a few months busking in the cold, the Music Page finally returns to *Acorn User*. So what has happened in the Acorn music/audio scene since I last wrote this column back in June? Well, quite a lot actually, but it's not all good.

There are new packages appearing (see next month's review of Clares' Rhapsody 4) but the majority of third-parties seem to be hedging their bets by writing PC/Mac versions of existing Acorn titles, and in the case of Sibelius, abandoning the Acorn format all together – though that's because the needed development software just doesn't exist for RISC OS. What seemed like a flourishing, dare I say it, growing market, appears to have turned into a rather stagnant mire.

I guess the easiest person/company to blame is Acorn for 'pulling-out' so unceremoniously on the 17th September. Just when everything was looking good for the future of RISC OS audio and ditching what could have been the best platform for creating music around. Now though, with the ever-growing onslaught of Wintel, plus the successful relaunch of Apple, it seems unlikely that anyone will see Acorn as a serious contender.

Probably the single most important ingredient for a successful platform is the availability of good software, especially the so-called killer-apps. The award-winning Sibelius score writer was just such a program with people buying Acorn hardware just so that they could run it. Now though, due to Acorn's lack of support, Sibelius no longer see it as a viable proposition. The official line from Benn Finn (Managing Director of Sibelius) is as follows:

"As you may have heard, Acorn recently announced that they have decided to cease development of new RISC OS computers and of the C++ compiler that was due for release a few months ago.

"Acorn's decision unfortunately means that it is now impossible for us to release the new *Sibelius* program for Acorn computers, as their C++ compiler is essential for us to make any further progress on the project.

"In the light of this, we will be extending the current special offer for Acorn *Sibelius users* until 28th February 1999. Before this date, registered owners of the program can purchase Sibelius for Windows at a special discount price."

So, it does indeed look like the end for Acorn *Sibelius*. A quick glance through *Sibelius'* new web site makes no mention of the Acorn version, in fact it makes no mention of Acorn whatsoever. This is particularly sad as it was *Sibelius'* success in the Acorn marketplace that allowed them to move in to the PC and Mac arena.

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ESP thinking ahead

Expressive Software Projects are another hardware/software company synonymous with the Acorn market. So it's also rather disturbing to see them bringing out products specifically for the PC and Mac. To their credit though, they do say that they expect to eventually have versions of their software for all platforms (including Acorn) although it could still be construed as a step in the 'wrong' direction.

First off is kind of cross between a MIDI sequencer and MIDI player called *MIDIGrid*. The program, currently only available on the Windows platform, allows the user to arrange single or groups of notes on a grid and then played back.

This rather unconventional approach to writing and playing music has been designed and developed in conjunction with the York Electronics Centre at the University of York; one of several collaborations with outside companies that ESP are currently pursuing

Second, *E-Scape* is a musical performance and composing tool ideally suited for people with restricted physical movement. The program has been designed to be easy to use and can even be operated with a single switch or by computer speech cues.

The program can also be operated using mouse, trackerball, sonic beams, or keyboards, making it accessible even to those who previously were unable to play a conventional musical instrument.

While I completely condone ESP's efforts to bring music to a wider group of users, I do hope that they continue to support the Acorn market and release RISC OS versions of *MIDIGrid* and *E-Scape* soon.

MIDIGrid costs £95 (exc VAT) and is currently only available for the PC. *E-scape* costs £250 (exc VAT) and is currently only available for the Apple Mac.

ESP can be found at 21 Beech Lane, West Hallam, Derbyshire, DE7 6GP. Phone 0115 944 4140, fax 0115 944 4150, mailto:sales@exsoftpr.demon.co.uk and http://www.cybervillage.co.uk/acorn/esp/



And finally...

So what of the future for Acorn music? Companies specialising in RISC OS audio software and hardware have come and gone in the past (who remembers Armadillo, or Mike Beecher's EMR?) so who's to say that another company won't appear and save the day? Personally, I can't quite see it happening, but I'd love to be proved wrong.

If you, or someone you know is in the process of producing that killer app, or even just have an idea for one, now is the time to stand up and let everyone hear. Who knows, you might even be remembered as the person who saved the (Acorn) world.

Contacting me

You can write to me, Rob Miller, at Music Page, Acorn User, Tau Press, Media House, Adlington Park, Macclesfield, SK10 4NP or by e-mail to: music@acornuser.com



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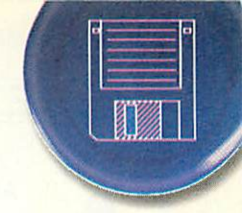
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What we had to trim



Unfortunately there was so much that we wanted to fit on to this month's cover disc not only did we have to leave loads of great stuff off (including a superb new game that will have to wait until next month) but we also had to trim some of the features that have been included just to get them on.

So let's see what goodies are not quite the way they were supplied to us:

RC5 Cracking

We wanted to put both the multitasking and single-tasking versions on, but we couldn't. So we just kept the multitasker. As you have to have Internet access to use this at all you can pick up the single-tasking version from the *distributed.net* site. See the feature on page 49.

*INFO

Some of the example files have been cut from *!Carbon*, our apologies to Adam Granger on that. And we had to viciously prune the larger textures from Jan Vibes' *!Textures* program. *INFO starts on Page 57.

Rambles Extra

The LED controlware was supplied with the WimpBASIC source code, which we had to leave out. Other than that it works perfectly. Check it out on Page 74.

Disc information

The software on the cover disc has been compressed using ArcFS 2 from VTi, and are opened by running a copy of ArcFS then double-clicking on the archive to open it. There is a copy of ArcFS on each disc.

Most software will run straight from the archive, but some programs may need to be copied out of the archive before being run, uncompressing them in the process. Any program that saves a file to disc, for instance, will be unable to do so into the archives on the disc.

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If your disc is faulty, test whether it will verify by clicking with Menu on the floppy drive icon and choosing Verify.

If it fails to verify or is physically damaged you should return it to *TIB, TIB House, 11 Edward Street, Bradford, Yorkshire BD4 7BH.* If it verifies successfully return it to the *Acorn User* editorial office at the usual address.

The *Acorn User* cover discs have been checked for viruses using Killer version 3.001 from Pineapple Software.

Regular & Features

- Java: sample classes and HTML
- The multitasking RC5 cracking code, join the battle and help RISC OS win
- Run the Risc: LED display sequence control using PIC
- Plus (nearly) all the *INFO programs.

Extras

- From fans of Mike Cook: LED controlware

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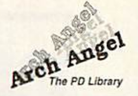


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Upgrade prices Ancestry 1 - £50 Ancestry 2 - £40

Life, the universe and Java

Mark Moxon kicks off a new series on RISC OS Java programming with a look at compilers, browsers and the basics of Java

If you're propping up the bar in a West End club and that rather attractive stranger kicks off the smalltalk with a 'So, what do *you* do then?', what's the best answer? Do you say: 'I'm a C++ programmer'? Er, no. Or what about: 'Well, I work with computers'? Probably not. On the other hand, do you say: 'Actually, I'm a Web designer'? Ah, that's the one. The Web is cool, no doubt about it – especially among people who don't really know what it is.

And because of that, Java is cool. Every Web designer worth his salt knows Java, and every Web designer worth his fee knows that having Java in your curriculum vitae beats even the old school tie when it comes to employment prospects. If you're looking at learning a programming language, make it Java.

Peter Naulls looked at reasons for the popularity of Java back in the December 1997 issue of *Acorn User* but, in case you missed his article, the main reason Java is so important is that it is truly portable: it can run on any system capable of running a Java Virtual Machine (JVM), which RISC OS can. This makes it perfect for the Internet: HTML is platform-independent, and so is Java. Combined, they are responsible for transforming the World Wide Web from a passive collection of hyper-linked pages to a dynamic and interactive experience.

Java on RISC OS

To write Java programs for the Internet you're going to need five pieces of software. Luckily quite a few of these are freely available from the Internet, and the relevant URLs are given in the 'Where to get your Java kit' box.

The first thing you'll need is a Web browser. A commercial product – like Acorn's *Browse*, the ANT *Internet Suite* or R-Comp's *WebsterXL*

– is the only option, as unfortunately the free browsers *ArcWeb* and *Webster* do not work with Acorn's JVM.

The second is a JVM for RISC OS. At the time of writing the only JVM available is Acorn's *RISCCafé* CD which works with all the popular browsers and implements Java 1.0.2. Despite the turmoil inside Acorn, work is progressing on a Java 1.2 version for the NC, but whether this will translate into a RISC OS product remains to be seen. Another option for the future is the Java 1.1 JVM *Chockcino* from Peter Naulls; this isn't available just yet, but keep an eye on the *Chockcino* home page for updates.

The third essential package is a Java compiler. Again there is only one choice here, *Guavac*, again from Peter Naulls. A Java compiler takes Java programs and produces a Java 'bytecode' file, which can then be run by any JVM, and *Guavac* does a good job of compiling. Instructions are provided, but I'll cover how to set up your *Guavac* system properly in a moment.

The fourth bit of software you'll need is a good editor. You can always use *Edit* but, given that there are some much better free editors available, you'd have to be mad to stay with it. Both the main contenders, *Zap* and *StrongED*, have Java and HTML modes that make programming in these languages a dream. If you haven't used either before, *StrongED* is probably easier to get to grips with (its help system is excellent), but *Zap* is more powerful – if you can get past the technical barrier of its help files. I tend to flit between the two regularly, but that's because I'm indecisive. Probably...

The final piece of the puzzle is a long-filename filing system. You could survive perfectly happily without such a beast but then you'd be restricted to ten-character filenames, whereas with a free piece of software like *X-Files* or *raFS*, you can have filenames that actually mean something. Bear in mind also that Java programs have the suffix /java and bytecode files /class, so if you stick to the standard Filer these suffixes will be truncated. This could cause problems if you copy files directly to the Internet.

If you don't use *X-Files* or *raFS* it's a good idea to uncheck the Add extension flag in *Guavac*, which prevents the /class extension being added to compiled code. Personally I find *raFS* to be the more reliable application: having once lost my entire Web site to an *X-Files* crash I'm speaking from experience. Whichever system you choose though, always keep a backup.

Installing Guavac

All these pieces of software come with instructions, but I'll just go through the setup procedure for *Guavac*, as it's worth putting in the effort to make it easier to use. Kaustav Bhattacharya examined *Guavac* in the March 1998 issue, but since then it's been updated with a desktop front-end, so you no longer have to tackle task windows and the command line interface. Having downloaded the *Guavac* archive, do the following:

- Copy everything out of the archive into a new directory on your hard disc.
- Drag the *FrontEnd1.!Guavac* application into the same window as the main *Guavac* application. This will install a desktop front-end for the compiler. (You can also do the same with FrontEnd2, which does a similar job but looks slightly different and doesn't implement the Dependency list option.)
- Create a directory in which you will store your Java programs.
- Create an Obey file called *!CSD* containing just one line:

```
Dir <Obey$Dir>
```

  and save this in your program directory.
- To compile a program, double-click on *!CSD* before dragging the program text file to the *Guavac* icon. This sets the currently-selected directory to the directory containing the program, ensuring that the class files produced by *Guavac* are saved in the right place. Otherwise they would appear wherever the CSD was set to (normally the root directory).

Now we're ready to try out our first Java program.

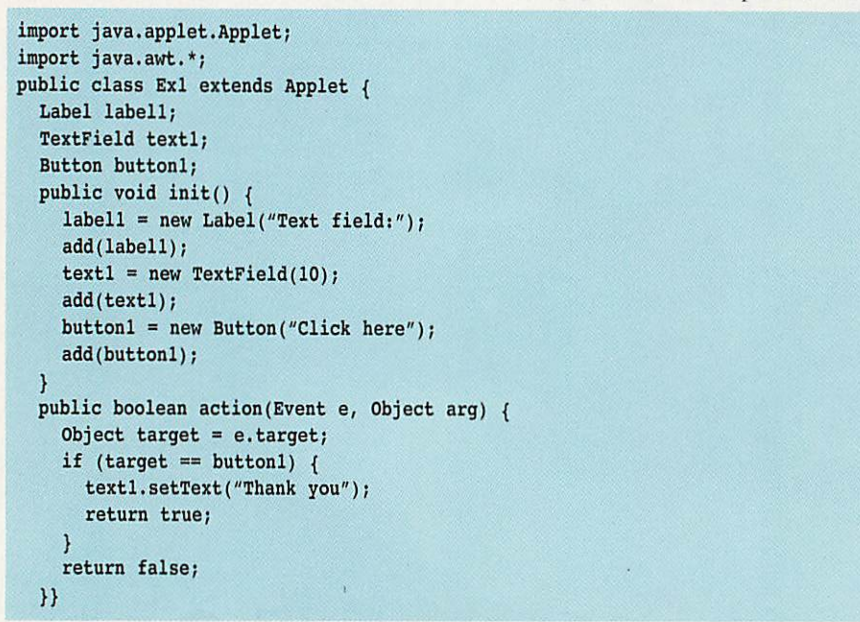
Compiling and running Java

Figure I contains an example program. Those of you who have ploughed through books on BASIC and C will be ecstatic to note that it does a little more than simply print 'Hello World' on the screen. I hereby promise that none of my example programs will do anything as boring as print out 'Hello World'; instead I'll jump straight into the fun stuff you can do with Java: buttons, text fields, menus, scroll bars and all the other visual parts of Web surfing.

You can learn Java as a full-on programming language and get bogged down by example programs that compute multiplication tables and implement basic databases, but where's the fun in that? There's only one prerequisite for this series: enjoy yourself. Java is fun and, if you fail to see that, you've missed one of the fundamental advantages of Java over heavyweights like C++.

Having said that, the example program isn't exactly ground-breaking, but at least it does something – in any case, it's a good place to start learning to compile Java. Type in the program exactly as shown (Java is a case-sensitive language); alternatively, pull the source code off the cover disc. Save this program as a text file called *Ex1/java* in your program directory, double-click on *!CSD* and drag *Ex1/java* to the *Guavac* icon.

Guavac will now go off and compile your code. It will generate a warning about



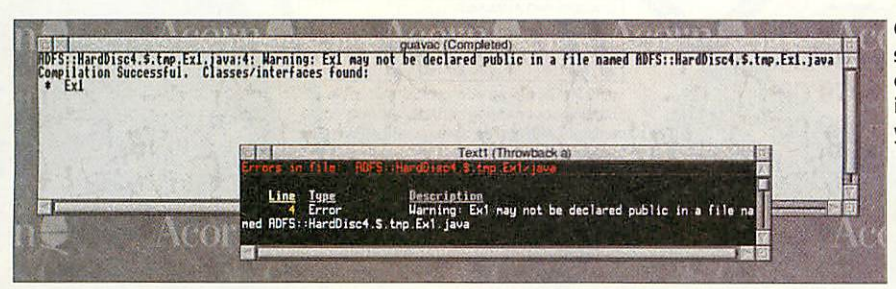
```
import java.applet.Applet;
import java.awt.*;
public class Ex1 extends Applet {
  Label label1;
  TextField text1;
  Button button1;
  public void init() {
    label1 = new Label("Text field:");
    add(label1);
    text1 = new TextField(10);
    add(text1);
    button1 = new Button("Click here");
    add(button1);
  }
  public boolean action(Event e, Object arg) {
    Object target = e.target;
    if (target == button1) {
      text1.setText("Thank you");
      return true;
    }
    return false;
  }}
```

Figure I: The Ex1 Java program

```
Java example»»[Unfortunately you cannot run Java]
```

Figure II: Including a Java applet in HTML





Compiling with Guavac, showing throwback in operation. You can safely ignore this warning when you compile Ex1.

declaring Ex1 as public, but you can safely ignore this. If you have Throwback enabled in *Zap* or *StrongED* you'll get a throwback window, which is useful if you make a mistake: clicking on the error brings up the offending line. The *Guavac* window should say 'Compilation successful'; if not, check you haven't made a typing error somewhere and try again.

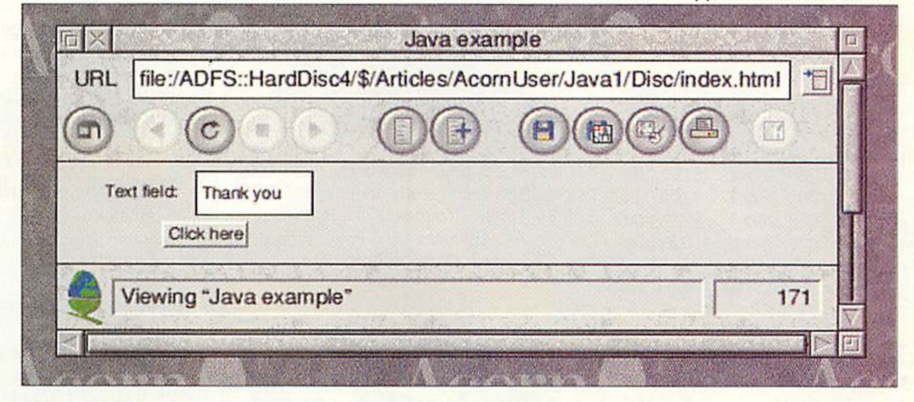
If all went well, *Guavac* will have created a file called *Ex1/class* in the same directory as the program. Congratulations! Thrilling as it is, you have just compiled your first Java bytecode file. Now let's see how to include it in a Web page.

Java and HTML

The reason that Java took off faster than a serial bachelor on hearing the M-word is that it can be included in Web pages. You might have heard about another language, JavaScript, that can also be included in Web pages, but the two are totally different. The former was invented by Sun and is partially compiled and referenced from HTML, whereas the latter was invented by NetScape and is included uncompiled in HTML files themselves. We'll stick to Java, because only *WebsterXL* supports JavaScript at present.

We include a Java bytecode file in an HTML document using the APPLET element, which can take (among others) the following attributes:

CODE="Ex1.class"	The name of the bytecode file to be run (assumed for now to be in the same directory as the HTML document)
WIDTH=200	The width of the page space allocated to the applet (in pixels)
HEIGHT=200	The height of the page space allocated to the applet (in pixels)



Running our example Java applet in Acorn's Browse

There are also attributes to set spaces above and below the applet, give the applet a name, load an applet from a different URL, and so on. However we'll stick to simply running the applet in our document with a fixed space.

A typical HTML document for running the Ex1 applet is shown in Figure 2. To see it in action, simply put the HTML file (called *index/html*) in the same directory as the *Ex1/class* bytecode file and double-click *index/html* to load it into your browser. Assuming your browser can run Java, you should see the results of your hard work (if your browser is not Java-savvy, the apologetic text between the APPLET tags is displayed).

Welcome to the world of Java. Don't you feel like a totally new human being now? Exactly.

Java 1.0.2 vs Java 1.1

Since the series continues next month with an in-depth look at Java, I'd better clarify in advance the main differences between Java 1.0.2, Java 1.1 and Java 1.2. At the moment only Java 1.0.2 applets can be run on RISC OS, though work is progressing on Java 1.1 and 1.2. This isn't a huge problem, as Java 1.0.2 is still regarded as a 'lowest common denominator' and Java 1.1 and 1.2 are backwardly-compatible with this version (though bits of 1.0.2 are 'deprecated' and may be dropped from future standards).

Java 1.1 is the current standard, and Java 1.2 will be the next as it's stable and has a number of security enhancements, so if you're learning Java from scratch you should look at Java 1.2 or at least 1.1. On the other hand, if you were to learn Java 1.2 from this series you wouldn't be able to run your programs on RISC OS: for that reason I'm sticking to Java 1.0.2 until a 1.1 or 1.2-savvy JVM is available. As *Guavac* handles both Java 1.0.2 and Java 1.1 you can create bytecode files for the later versions of Java – you just can't run them on RISC OS yet, although you can always port them to a PC and try them out there.

I mention this because even our simple first example contains a Java 1.0.2 feature that has been deprecated in Java 1.1 (the event handling system has been radically changed, for those who are curious). For now, though, don't worry about that: later on in the series I'll tell you how Java 1.1 works so that you can start creating non-deprecated code as soon as we get a 1.1-friendly JVM on RISC OS.

Out of time

Tune in next month when we'll take a more detailed look at the buttons, labels and text fields in our example program and make a quick stab at some other Web-friendly Java features like radio buttons and check boxes. Until then, make sure you tell all your friends you're learning Java. Remember, it's cool. AU

Where to get your Java kit

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Slipped *discs*

Stephen Scott reveals the story behind the latest cover CD...

ACORN USER
Items include:
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Acorn User CD ROM Problem Summary

This panel details bugs, omissions, and upgrades of software on the CD-ROM as of 30th October 1998. Those of you with Internet access who want a more up to date list can find it at *http://www.acornuser.com/aucd4.html*

Boot Sequence:

Many users have had difficulty following the supplied instructions, so here is a clearer version. You'll need about 42Mb of hard disc space, and knowledge of the fact that holding down the Shift key actually moves files from one location to another, without making copies.

- Create a new directory, called *NEWBOOT*.
- Copy *BOOT/ARC* from the CD-ROM into NEWBOOT.
- Ensuring *!SparkPlug* is present, open *BOOT/ARC*.
- Drag the contents of *BOOT/ARC* into *NEWBOOT*.
- Create a second directory, called *OLDSTUFF*.
- You should now have two new directories; an empty one called *OLDSTUFF*, and another called *NEWBOOT*, which contains *BOOT/ARC*, *!Boot* and 11 directories.
- With the root ($) directory on screen, double-click on *OLDSTUFF* to open it.
- Shift-drag everything (except *NEWBOOT* and *OLDSTUFF*) into *OLDSTUFF*.
- Your root directory should now contain just the *NEWBOOT* and *OLDSTUFF* directories.
- Open *NEWBOOT*. Shift-drag everything inside *NEWBOOT* (except *BOOT/ARC*) to the root directory. This will move the new boot sequence into its proper place – the root directory of the hard disc.
- Reboot. After a little while you should now find yourself running the new *!Boot*. You will then need to set up your original configuration using your old copy of *!Boot*.

A little *!Boot* bug was discovered by one reader concerning Risc OS 3.1 users, which appears to crash machines. The line is in *!Boot.Utils.BootRun* (one of the

Those of you with long memories will recall my article in the January 1998 issue on how I created last year's cover CD-ROM. I concluded the feature by stating 'Here's to the next even better cover CD.'

I made this statement in the belief that someone else would do this subsequent disc. It was quite a surprise then, to have been given the chance to have another go at it, and for the 200th issue no less.

This article will attempt to compress five or six weeks of solid work into a few pages. It serves as an excellent case study to accompany my recent short series on CD writing solutions for the Acorn platform. Those of you expecting this article to be a re-hash of the previous one should know that many more lessons have been learned as a result of producing the disc. These lessons will prove useful to users hoping to produce cross-platform CDs.

As well as recounting my experiences, I have also produced a summary of the errors and omissions discovered after the disc was mastered, both by myself, and by users alike. This includes the rather worrying admission that some of the disc content cannot be accessed on non-Acorn machines. I will explain this later.

The beginning

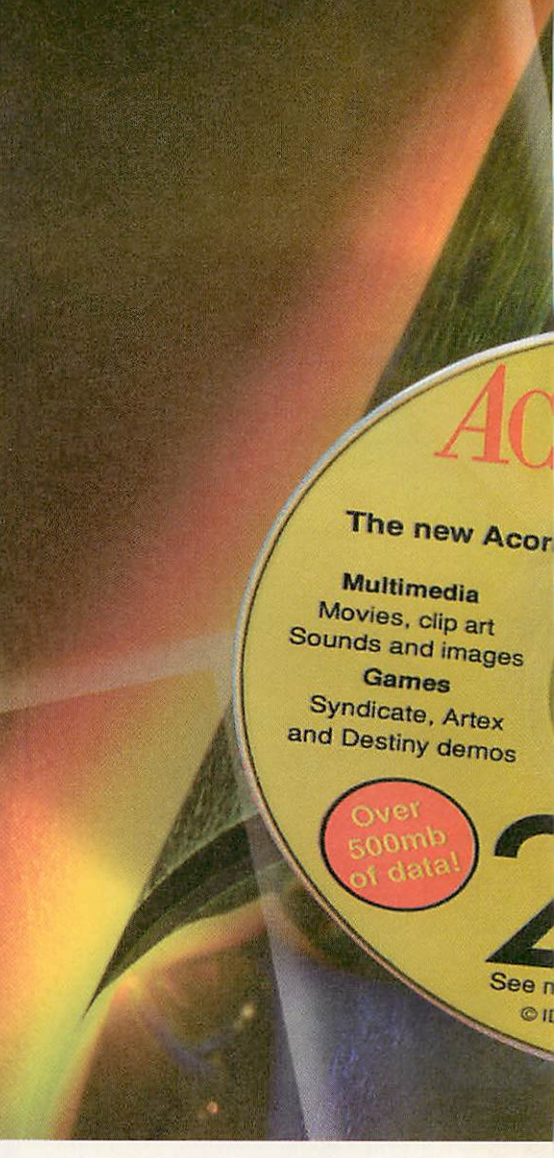
Having just been released from the shackles of higher education, and awaiting graduation, I returned to IDG Media last July for yet another summer placement. The only difference being that, at the time, I had an uncertain future beyond the summer. Of course, things are much different now.

Whereas last year, I started work in July, it was not until August this year that I was given the task of creating this years disc. Being for such a prestigious issue, I couldn't refuse. Yet, my immediate concern was the lack of time – about five weeks, half the time I had available before.

I was starting to fear that it couldn't be done. Karen Peach (our former deputy editor) thought I was barking when she saw me accept the task. Yet, in my mind, nothing can be that impossible. Could it?

Several technical problems came to mind. The first was that, initially, I had no CD writer. Secondly, the only Acorn machine with a SCSI card to connect the CD writer, a Risc PC 600, possessed a 400Mb hard disc. Since you need about 1.5Gb to hold the CD contents, and the resulting image file (with some breathing space left over) my storage area was about as much use as a fur coat in Indonesia.

However, there were two other Acorn machines, both A7000+ models, which possessed good size hard discs as standard, but no SCSI cards. All the machines however, were fitted with



network cards, Acorn *Access* and *Omniclient*. And with access to IDG's huge FTP server, I thought I had all the necessary resources with which to complete the task.

More luck came in the form of my recent CD writer review, so I now had access to the review drives, and the latest Acorn software. Last time, Acorn's *!ISOForm* formatter was used to build the image, which was subsequently transferred via FTP to a Macintosh fitted with CD-R drive to produce the gold master. This year, an Acorn disc would be produced on an Acorn.

And so the scene was set, and I duly posted my submission pleas across the Acorn newsgroups. Soon, they came flooding in, by e-mail, FTP, and occasionally, by post.

There were the inevitable problems, such as those who asked me to visit their websites and download their software, when my reuqest specifically said otherwise. This was a time-saving measure, to help me spend more hours on actually producing the CD, rather than constantly opening up *!Fresco* and having to put up with download times as fast as a tortoise plodding through treacle.

Then there were those who suggested I should hang on until they finished their latest version, which never materialised, meaning having to scrap directories set up for their software. I should hate them

really, but then there is my *Jaw Wars* game, promised to the world about six months ago, and untouched since.

Long filenames

Then there were the websites to put onto disc. Because web files require the */htm* or */html* DOS file extension, this meant the actual filename could only be five or six characters long, otherwise RISC OS would truncate the name, destroying the URL links made within the website. Some people complied, while others decided to use image filing systems, such as *!X-Files* and *!LongFiles*. This was an unproven area for me, and for them as well, so for two reasons, I would be entering dangerous territory.

Firstly, these submissions may not work on non-Acorn machines. And secondly, how reliable was Acorn's CDFS in appreciating these image filing systems?

I decided to go ahead with it, for it would have been too time consuming to have to alter filenames to fit the imposed ISO 9660 restrictions on CD-ROM production. Both them and I prayed that it would work.

With all these events taking place, there was still the small matter of the interface. Although comments were positive about last years design, people had trouble actually looking for software, due to the large capacity of such discs. The second cover disc from 1996 used an HTML interface, so I chose to partly return to that method, with another *HyperStudio* interface in tandem. You could then either use both, or, if you were using a PC or Macintosh to access the disc, the HTML interface, with the help of *Internet Explorer* or *Netscape Navigator*.

As you can tell, the HyperStudio front end is far more simplistic than last year's, which was adorned with elaborate backgrounds and illustrations. I stuck to three colours, black to grey, Phoebe (or Phoenix) yellow, and white. The black and grey would be the background, while the latter two colours would be used for typography and icon design.

All of the icons were designed using *Artworks*. I used the Object Linking and Embedding (OLE) feature within HyperStudio to edit the icons and their positions within each stack to speed up working. I made a template stack to save time, dropping the appropriate linkages in so that everything worked as it should.

There were still other things to consider during the design and production of the CD, such as the disc artwork, and the full page article. And then there was the writing of the HTML pages to catalogue every submission. This ultimately became an unattainable task, due to the sheer number of entries coming in.

Eventually, the submission deadline came and went. Some submissions came in over the August Bank Holiday, for me to deal with in the week that should have been spent producing test writes and correcting bugs. Some came even later, such as the *Eternal Destiny* and *Iron Dignity* demos, because the original uploads had become corrupted. I

The HyperStudio interface

first files to be run on startup) which runs *HOn:*

```
/Boot:Utils:HOn
```

Although only a couple of lines long, its execution completely crashed the reader's A5000 and A440/1 machines. The problem can be fixed temporarily by commenting out this offending line, by placing the vertical bar | at the beginning of the line.

Easter program:

This program has been upgraded since its inclusion on the disc, and cures the problem concerning the availability of version 0.02 of the TinyStubs module, which the software requires. The new version is available from author Iain Truskett's website at *http://koschei.shada.com* as well as our website.

AltTab:

This program has been upgraded by the author, Christopher Martin, and is available from our website.

Careers Workshop Software:

The quoted prices in the helpfile for Robert Werry's excellent software were incorrect. The correct UK and Australian figures for the RISC OS version are £60.00 ($160), while the Windows version costs £65.00 ($170)

Running the disc on a PC:

This problem is explained more fully in the accompanying article, and also on the Acorn User website. In simple terms, the forward slashes used under RISC OS to separate DOS extensions from the filename, do not convert to full stops on PCs and Macintoshes. Consequently, any such files will not work on these machines.

A patch for Linux version 2.0.35 has been written to workaround this problem. It does not apply to Linux 2.1.xxx. The patch can be downloaded from *http://www.reinhouse.demon.co.uk/soft/patch-cdburn.diff.*

Education Directory/ Cognitive Software:

Opening this directory appears to crash most Acorn machines. It is apparently caused by a Basic file within the *!COGSYS* directory, which attempts to perform a filing



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- Free! Acorn User from 1988 to 1996 inclusive, except Feb 1995. 1988 and 1989 in binders. Recipient pays carriage or collects. Tel: 01383 720656 eves. (Fife)
- Visually impaired octogenarian, using faithful but ailing Master Compact, seeks working replacement, same model. Dennis, 01482 346812
- EasiWriter Pro (Word enabled); £50 ono. DataPower (version 1); £40 ono. Prices include postage. Phone 0131 447 8624 or contact kosie@zetnet.co.uk
- ProArtisan2 CD £15, Acorn Advance £10, 510MB SCSI drive with 6 removable cartridges £60, Phone 01543-491867 (Staffs)
- A5000 4Mb/120Mb. Defect on one sector but quite useable. AKF18, FPA, ColourCard, 16bit SCSI, Irlam colour hand scanner. £300. Artworks, Impression Publisher Plus, Acorn Cv4. Offers.Dave, 01823 673001, Devon
- WANTED: 1x mouse for A5000 (original dying). AND/OR user-port module. Contact: MidnightTrooper@hotmail.com or Lewis: 0181 508 4311.
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- For sale: StrongARM Risc PC, 2 slices/4 slot backplane, APDL/ICS IDEa EIDE interface, 50MB RAM, 3.2GB harddisc, 105MB Syquest removable harddisc, 2x CDROM, 100MHz PC co-processor, latest !Boot, loads of software inc CD-ROMs, DaVinci 90, etc. £800 ONO. ian.scott@zetnet.co.uk or 01388 762443.
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- For sale: Acorn AKF 50 multiscan monitor, stereo speakers & Canon BJC 70 portable colour printer (with several extra ink refills). All in excellent condition - £250 plus postage.Tel: Trevor on 01579 347303.
- For Sale: Risc PC600 - no monitor, 9MB Ram, 400MB HD, PC486, Software including Impression, Artworks, Revelation, Fireworks and lots more apps & games. £375 ono. 01279 871519
- For Sale: PC card DX4 100 - 120 ukp; SCSI 2 card - 70 ukp; Impression Publisher - 45 ukp; ArtWorks 45 ukp; Composition - 35 ukp; Pro Art 24 - 35 ukp. Tel. 01648 300535
- A3010 4Mb/80Mb/UserPort +Manuals +Mouse +Games £150 ono. Taunton (01823) 490322
- Wanted software for Acorn Archimedes suitable for children aged 4 to 7. 0151 677 3818
- RiscPC, Strong Arm upgrade, 32mb Dram, 1mb Vram, 1.2Gig HD, CD Rom, Software includes Fireworkz Pro. 486DX4 100 Second processor. £1000 ono Please call David on 0115 910 5329.
- 4 Meg RAM. 40 MEG Hard Disc. AKF 18 Monitor. Assorted software. E-mail: steve.t@argonet.co.uk
- WANTED: Any PC card, associated software for RISC PC, Windows 3.1+ and Excel. Contact Peter by e-mail: pjd@arcade.demon.co.uk
- Sibelius 7 professional music scoring software, used by top Hollywood film composers. Boxed & manual. Worth £1000 - sell with complete Acorn system for £800. (will split). Tel: Rob on 01225 423286 or email: au@robh.freeserve.co.uk
- RISC PC600, Strongarm, Sibelius7 v3.5 (licensed, worth £700), MIDI interface, HD-420MB, RAM-32MB, VRAM-2MB, 33MHz 486, 16bit sound, CD-ROM, AKF60 monitor. £1050, Steve, 0113 2264912 (Leeds).
- For Sale: Notes, X-Fire, Enter the Realm: stlg 6 inc postage (X-Fire won't work for me) Tel: Chris on 01642 815091 (Middlesbrough)
- Wanted for young musician: Sibelius 6. Will pay second-hand price. Also wanted, A4000 MIDI interface. Tel: Chris on 01642 815091 (Middlesbrough)
- A4 Portable 60MB drive, 4MB RAM, £300. C/C++ (SKB78), £40 inc P&P. Both ONO. Cambridge (01223) 561190
- A5000, 8MB RAM, SCSI1 with POWERROM, 2xCDROM, Viper 150 Tape drive + 9 Tapes, Ether3, AKF18, 1.6GBHD, 400MBHD, Linux installed, £395, tel Chris: 01285 713514
- GAMES! Drop Ship #3.00, Grevious Bodily 'Arm #3.00. Phone Dave (01926) 435189 Or Email dflynn@intstudios.co.uk
- Acorn RiscPC 610, 17meg RAM, 420meg hard drive, CD-ROM, PC-card, 16-bit sound, keyboard, mouse. Excellent condition. NO monitor included. £425ono. 0151 677 9585
- StrongARM Risc PC 600, 203 Mb HD, 5 + 2 Mb RAM, 17" colour monitor, Turbo Driver, Midi Interface, £700 ono. Tel 01691-780452 (Oswestry)
- RISC PC600, Strongarm, Sibelius7 v3.5 (licensed, worth £700), MIDI interface, HD-420MB, RAM-32MB, VRAM-2MB, 33MHz 486PC, 16bit sound, CD-ROM, AKF60 monitor. £850 (will split), Steve, 0113 2264912 (Leeds).
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There are more Free Ads on page 56

felt that *Destiny* deserved a wider audience, and once again took the risk of leaving it unarchived on the CD, as I did last year.

Image matters

The final burn to the gold disc was the moment I had dreaded. By this time I was nowhere near as enthusiastic as I was at the start of the project. I just wanted it over and done with. Couple this with the stress of wondering whether the master would burn successfully first time, and you end up with, at best, a headache, and at worst, feeling suicidal.

For mastering, I used Warm Silence Software's *!CDBurn*, because I turned to it more often than the other solutions. The ISO 9660 Level 1 standard dictates that all files must be in upper case, with only the numbers 0 to 9 and the underscore character to be used. Also, you could not have directories nested more than eight levels deep.

CDFS provides some relief by allowing filetype extensions, and use of the ! for applications. There are other flavours of the above ISO standard, but these would not perform at all well under most Acorn machines, so I chose Acorn format with CDFS extensions, believing that ISO Level 1 was included within it. This turned out to be a big mistake for PC and Mac users.

Because CD-ROM is a write-once technology, any data that is to be sent to disc must be perfect. No corrupted data, no excessively nested directories, no Internet or e-mail programs suddenly activating half way through the mastering process to render the disc useless. To make data perfect, you need special software to do it for you.

With the content totalling 527Mb, I needed this much in hard disc space to create the image file which would ultimately be burned onto gold disc. The problem was that, at first, I couldn't find this space. I then began what was to be the worst experience in the whole project – an all night session with (cue those violins) only a packet of cheap crisps from the security guard to keep me going.

This whole night was spent performing the computer equivalent of musical chairs – using one machine to produce the image file, with the data being transferred at the same time across the small network to a machine with enough storage space for the resultant file.

Looking back, the whole chain of events is too confusing to try and explain in full here, suffice to say that the night was not without incident, such as hard disc errors preventing the image file from being created, quoting one example. I then had to transfer the whole CD directory to another computer, and hope that things improved the other way round. Eventually it did, but it took me about 8 or 9 hours before I could begin to burn the gold disc.

By now, some staff were horrified to have discovered that I had been up all night. While the burn was taking place, Pam Turnbull practically pushed me out of the door to go to the Little Chef just down the road, since I hadn't eaten for so long.

On coming back, I found that the mastering had failed yet again. The reason this time was a *buffer underrun* error – too little data was being sent to the disc to make it work properly. So, I started again, for what was to be the last time, making sure I had selected the lowest writing speed possible. It was the longest hour I have ever had. There would not have been another chance.

Slashes and periods

Thankfully, the whole gruelling session was at an end, and the disc was working properly. The project was finally over. Well, at least it was at the time. For it was to be a month later that I discovered the disc would not work properly on a PC or Macintosh.

Those of you who use these machines and have tried opening any files ending with DOS extensions will know what I am talking about. *!CDBurn* had hardwired the forward slashes (/'s) normally used by RISC OS to separate filename extensions, onto the CD, instead of altering them to full stops. Since non-Acorn machines rely on the full stop and nothing else, any files with this character would not open.

I found this occurred because of *!CDBurn*'s rigid obedience of ISO 9660, CDFS and RISC OS filing conventions. I had selected *Acorn CDFS* from !CDBurn's Format list as the type of CD I wanted to make, falsely believing that the ISO standard was embroiled enough within it to make a satisfactory triple platform CD. But, after much correspondence



The inclusion of the brand new *Iron Dignity* demo was one of the highlights of the CD-ROM

action on the CD, hanging the machine in the process.

You can bring a halt to it by pressing Alt+Break and clicking the Stop icon. The freeze will not occur again in the same session, unless you specifically double-click on *!COGSYS*, which should not be doubleclicked on anyway. Just use *!COGPROGS*.

The author, Dr S.H. Curry, has provided a small Obey file which consists of the following two lines:

```
Filer_Run
CDFS:$.EDUCATION.!CogSys

Filer_Run
CDFS:$.EDUCATION.!CogProgs
```

Enter these lines, saving the file as an Obey file. With the CD in the drive, run the Obey file, and the Cognitive Software Suite should open successfully.

Incidentally, three of the applications within this huge resource didn't make it onto the CD. All that remains are their application shells. The offending items are *!CARTOONS*, *!PAL* and *!PELMANISM*. These files can be downloaded from the Acorn User website as archives. Just merge the contents with the *!COGPROGS* directory (if you have moved the resource to hard disc), and all will be well.

ArcQuake Demo:

The archive in the *ARCADE.ARCGAMES* directory appears to be corrupted. However, another version, *ArcQuake6*, can be found within the *!AACADE* folder on the root directory of the CD. This version is complete, and merely requires an appropriate game PAK file to play the game. Please do not contact me about how to configure *ArcQuake* – I did not write it, Peter Teichmann did. His e-mail address is *teich-p@rcs.urz.tu-dresden.de*

!PGPlock, !Nuke, !RNDpass and !AutoCrypt:

These four programs should have been included on the CD, but were not. The first three are on last month's cover disc, while *!AutoCrypt* and later versions of the other software can be downloaded from author Nat Queen's website at *http://web.bham.ac.uk/N.M.Queen/*.



Creating AUCD4

Basil, RFSFiles, RFSApps, Document StrongED mode:

My description of these programs in the *UTILS/HTM* file left a lot to be desired, according to author Steve Drain. The correct descriptions are as follows:

- *Basil – Basil provides SWIs to load BASIC libraries into the relocatable module area and to use them in BASIC programs, so that only one copy of the code is needed for any number of applications. It also supports libraries held in memory by other programs, such as Basil modules and RFSFiles.*
- *RFSFiles provides commands and SWIs to add and remove files in Resources interactively without having to produce a special module. It also provide facilities for sharing such files and initialising data to help use common resource files.*
- *RFSApps – Use principally with RISC OS 3.60 or later. The module should reside on earlier versions but only applications added with *AddApp will be removable. Includes a module and utility versions of the commands.*
- *Document – A StrongED mode to display application document files. Document can be used with StrongED versions above 4.50 to help a user to follow sectioned text by providing context colouring and folding. In other editors the tags used are not too intrusive and can easily be stripped.*

Interface:

There is a broken linkage in the *MUSIC* section of the *HyperStudio* interface. Clicking on the *HTML* button should load the *MUSIC/HTM* file in the *MUSIC* directory of the CD. However, it instead links to a now deleted *MUSIC/HTM* file in the *MUSIC.DEMOS* directory.

A simple workaround is to click on the Directory button just below the HTML button. Then just double click on the *MUSIC/HTM* file that is present somewhere in the Filer window.

Websites and downloads

Acorn User CD Support page:
http://www.acornuser.com/aucd4.html

Warm Silence Software:
http://www.wss.co.uk/

!CDFix:
ftp://ftp.comlab.ox.ac.uk/tmp/Robin.Watts/CDFix.zip

with the author of the program, I found out the hidden truth of cross-platform CD-ROM authoring, which I can only explain briefly here (check out our website for more details).

In theory, a PC/Mac CD-ROM is very easy to make. Just select ISO 9660 Level 1 as the mastering standard, because it is the oldest and most supported. Forget the other fancy ones such as ISO Level 2 (which allows longer filenames) or *Joliet* (Microsoft's longer filenames and no restrictions on nested directories) – Level 1 is the best choice for maximum compatibility.

The ISO standard is very specific in how files are stored on the disc. But it does allow provision for the different methods of file handling that each operating system employs. In the case of our machines, it is CDFS which jumps in to give the disc some usability.

Any filename containing a full stop would be converted to a forward slash to enable the file to be used. Files beginning with the underscore character are interpreted as Acorn applications, which can then run direct from disc. CDFS is also expected to map any DOS extensions at the end of filenames to equivalent Acorn filetypes. For example, a file ending with the DOS extension .GIF should be interpreted by CDFS as /GIF, which is Acorn filetype &695, and update the file icon accordingly.

Unfortunately, this last feature is bugged within all presently available versions of CDFS. Instead, such files are shown with data icons, unusable from disc. This forces the user to move the file to hard disc, and filetype correctly. Not a very practical way of using a CD-ROM.

When I created both this year's and last year's discs, I was not aware of these problems, because I had a copy of the freely downloadable CDFS patch utility *!CDFix* (the download address for which can be found at the end of this article). In short, *!CDFix* filetyped the content of the discs properly, giving me the impression that the disc was truly cross-platform. The reality was that those users who did not have *!CDFix* installed would have not been able to use the disc properly.

Since *!ISOForm* formats discs to ISO Level 1 standard, the problem that occurred on last years disc was never apparent. But by selecting the more native Acorn CDFS format for the latest disc, any file containing a forward slash becomes unusable on a non-Acorn machine.

From this dreadful experience, I can say that the best way of producing a triple-platform CD is to format the disc to ISO Level 1 standard, and somehow include a copy of *!CDFix* to run automatically on bootup. If and when Phoebe (or Phoenix) is released, the totally rewritten and bug free edition of CDFS will prove beneficial, if triple platform CDs are ever to become more successful.

Conclusion

I have placed a lot of emphasis in this article on the nitty gritty of CD writing. The truth is that it is an area fraught with danger, especially in a commercial environment such as ours. If your notion of CD writing extends to merely backing up your hard disc, then you can expect little hassle. If your work is being copied thousands of times at great cost however, you really need to test, test and test again. I stated this in my past article, but succumbed to disaster where I had least expected it.

The adjacent panel gives a run down of some other problems tied to specific pieces of software included on the disc. Many are not serious, but the filename translation problem has been solved for users of Linux, by the kind submission of a patch program to allow the disc to be used successfully. If anyone can provide a similar patch for PC and Macintosh users, then it would be much appreciated. By the time you read this, the website should have more information about CD writing on the Acorn than any of my recent articles could allow.

This years cover CD was by far the hardest and most stressful, especially at the end. But a lot has been learned from the ordeal, and it will stick in my mind for a long time to come. And strangely enough, I do get immense enjoyment out of producing such discs, because the reward justifies everything. Whether I would be given the task again remains to be seen. Whoever does it next year, I wish them good luck.

Thanks to everybody who contributed towards the CD in every possible way, both before, during, and after publication, including Steffen Huber, the author of !CDBurn. AU



My all night mastering session had taken its toll by morning

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Portable money management

Mark Taylor takes a look at a range of finance packages from Palmtop

I don't know about you but one of my biggest problems is keeping track of my finances. I'm forever ringing the bank for my balance or taking trips to cash machines to print out a mini-statement as I've forgotten to write down what I've spent and what I've paid in.

To help people like me, Palmtop now offer a range of finance programs for the Series 5; *Money, Finance Calculator* and *Expense Manager* are all designed to help users keep on top of their finances and in my case save on phone calls (or should I say my parents' phone bill)!

Money

Money is described as being the fast and easy way to keep track of your finances. The package is based on the *S3 Money* application and users of this version can import their files into the S5 version.

As with all new Palmtop software, *Money* is supplied on CD. Instructions for installing the program are included for all the main operating systems including RISC OS (providing the user has PsiRisc or an equivalent). Once installed and loaded the program brings up the main screen containing tabs to access the 'accounts' (default) and 'categories' screens.

From the accounts screen you set up the details of all your accounts (saving, current, credit cards etc), including the account number, interest rates and current balance. As well as entering details for actual accounts, you can also set up 'virtual' accounts to keep track of the cash in your wallet, any liabilities, and to handle VAT transactions if required.

The accounts screen is a handy overview of your current financial position, showing the amount in each account and your net worth.

As soon as you have entered details of more than one account, the two tabs change to four with the addition of 'book' and 'scheduled'. This is a reminder that *Money* is, in fact, a full double entry book-keeping system.

Once you have set up your accounts, clicking on any account brings up the transaction book. Here you enter details of what you have spent and paid in. Entering a transaction is easy – click on the 'new transaction' button, enter a description, amount and category and: hey presto! If there is no category suitable for the transaction, selecting the 'new category' option brings up the 'create category' screen. This saves you the hassle of having to exit the transaction in order to do this.

Transactions can either be 'pending' or 'reconciled', allowing you to double check your Money accounts with that of your bank/credit card statements. The program also allows you to search previous transactions.

It is possible to split transactions between two or more categories; this is useful in many situations. For example, if you went to ASDA and spent £50, but broken down into £25 on food, £10 on clothes and £15 on petrol, you could enter one transaction and split it between three categories rather than entering it as three separate transactions.

Calling up the 'categories' window displays all the information on each category, including the name, type (income/expense), and amount. Clicking on a category brings up its transaction book.

The 'schedule' window allows users to enter future transactions or set up direct debits/standing orders. Scheduled transactions are set up in a similar way to other transactions except that once you have entered the details, another window appears allowing you to specify the starting date, how often it repeats (if it does) and the finishing date. A warning is given before any scheduled transaction is processed, allowing you to postpone or cancel it if necessary.

The program also allows you to budget a set amount per month for each category. This helps you forecast your finances long-term.

Money allows you to produce numerous reports showing the health of your finances. Reports include 'net worth', which gives you a snapshot of your financial position, 'profit and loss', which gives you a feel of your expenditure in a given period, and a budget forecast, which predicts your finances over a specified timespan. Each of the reports can be exported as a text file, plotted as a graph or printed out. Layouts of reports can be

TRIPS | Add | Edit | Delete | Preferences | Report | Graph

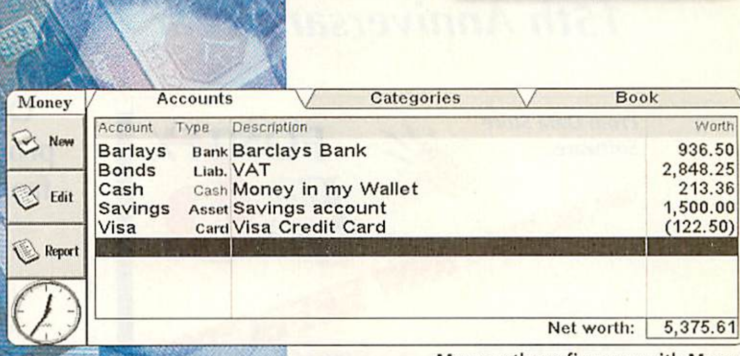
Expenses | Type | Client | Claim | Claims

All expenses

Date	Description	Type	Client	Tax		Amount	Claim
06/06	Pocket Money US		Psion	17.5%		-1500.00	Conference
06/06	Travel in US	Travel	Psion	17.5%	Km	230.00	Conference
06/06	Taxi Airport	Travel		17.5%		24.00	June
06/06	Tax Free shopping	Misc			$	599.00	June
06/06	Flight to Florida vv	Travel		17.5%		1048.00	June
06/06	Conference	Misc	Psion	17.5%	$	25.00	Conference
16/06	Taxi to hotel	Travel		17.5%	BP	14.50	Trip to Lon...
16/06	Diner	Food		17.5%	BP	33.75	Trip to Lon...
16/06	Lunch in Eurostar	Food		17.5%		48.00	Trip to Lon...
16/06	EuroStar to Londo...	Travel		17.5%		644.75	Trip to Lon...
16/06	Taxi to Railway S...	Travel		17.5%		23.00	Trip to Lon...

Unallocated 407.32 Allocated 3671.81 total 4079.13

Expense Manager in action



Manage those finances with Money

saved and recalled later, enabling you to bring up your favourite reports easily.

Money can also handle foreign currencies. Once a foreign currency has been entered, transactions on any account can be entered in any one of a number of foreign currencies. If you alter the exchange rate the package will automatically report a fluctuation and allows you to enter it in the transaction book.

VAT tracking is another feature of the program. Once VAT support has been turned on, you need to create a VAT account. You then select categories on which VAT is payable, enter the VAT rate and the VAT account. In future, when transactions are entered in these categories, the program will automatically 'split off' 17.5% to the VAT account.

The package also allows you to import and export data in the QIF standard. QIF files are supported by many PC packages including *Microsoft Money* and *Quicken*.

Money is an excellent program which has enabled me to keep my finances in a much more organised state. The only problem with it is that you must remember to enter the transactions into *Money*, so if you have a memory like a sieve you may still be in trouble. Very highly recommended.

Expense Manager

Expense Manager is designed for business users to help them manage their expenses and subsequent claims.

The package is supplied on CD and is a little trickier to install from an Acorn than *Money:* since it is not supplied as a .SIS file, it has to be installed manually (Palmtop supply full instructions.) Included in the package is a PC version of the program, allowing users to upload data onto a PC and prepare more advanced reports.

Once installed, *Expense Manager* presents you with the main screen, which bears a striking resemblance to that of *Money*. There are four screens available, 'Expenses', 'Type' (categories), 'Claim' (shows expenses for each claim account) and 'Claims' (shows each claim and reimbursement details).

The expenses screen allows you to enter details of either an expense, such as mileage, or a cash advance. Each expense can be categorised and placed, if you wish, into a particular claims account. Entering expenses is easy and very similar to the input of transactions in *Money*. As with *Money*, if the category/claim does not exist, there is an option to create it without having to leave the expenses screen.

The program also supports foreign currencies, taxes and non-reimbursable expenses. Expenses can be copied and altered at any stage of the proceedings, even if a claim has been submitted.

Having entered your expenses, you need to produce a claim (so you can be paid!). This is simply a matter of choosing the relevant claim account, or manually selecting the relevant expenses and selecting 'submit claim'. The claims screen will then appear showing the amount of your claim and its status (draft, submitted or reimbursed). The name of the claim also appears next to the relevant expenses in the expenses window. You then create a claim form, either on the Psion or using the PC application supplied.

Although the package allows you to print out information from any screen, it is also possible to create custom reports. This is easy: you simply select the date range, the claims to be included, the order in which you want them displayed, and what you would like each column to show. Once you are happy with the report it will appear on screen and can then be printed or exported.

When your claim has been settled, select the 'reimburse' option, enter the amount and date and the program updates as necessary. If a mismatch occurs it is displayed in both the claims window and in the expenses window, allowing you to correct it in a later claim.

Uniform series BEGIN	
150000,00	Present value
0	Future value
7/12	% Interest/period
360	Periods
-992,17	Payment/period
-207179,80	Total interest

FinCalc / Calculator / Browser / C / AC / Solve

Calculating your mortgage repayments with Financial Calculator

Expense Manager, unlike *Money*, is not a program everyone will find useful, but if you have to manage a large number of expenses you'll find the program a real help.

Financial Calculator

Financial Calculator is designed to allow the user to evaluate a variety of financial statistics, including such things as depreciation and rates of return.

The package is supplied on floppy disc and has to be installed by copying the relevant files on to the S5 (like *Expense Manager*) rather than via a .SIS file.

There are two main screens: the calculator window and the browser window. The calculator window allows you to enter all the parameters for the calculation – interest rate, mortgage value – and displays the result there and then, while the browser window is capable of generating a range of answers.

For example, if you were running a sales business and wanted to find out your break-even point, you would enter the relevant data in the calculator window where the program would show you the current state of your finances. The browser window, however, would present you with a range of results based on selling different numbers of items, allowing you to find the point at which you would cover your costs.

The program supports a large number of financial operations including break-even, interest rates, depreciation and bonds. It also features numerous length, area and volume conversion factors.

Financial Calculator is aimed at a very specific market and so will not be of use to everyone. However, if you regularly need to handle financial calculations you can't go far wrong with this. AU

Product details

Product:	Money
Price:	£49.95
Product:	Expense Manager
Price:	£49.95
Product:	Financial Calculator
Price:	£39.95
Supplier:	Local Psion dealer

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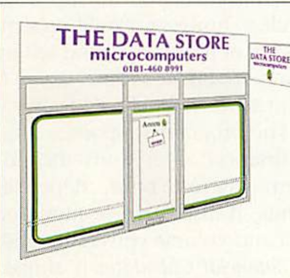
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Reach out and touch me

The TouchPad is one cool way to replace your mouse, says **Neal Philips**

As Stephen Scott so rightly pointed out in his *Penulator* review (October 1998), the mouse is an awful device to use for drawing; however another solution has come along in the form of Stuart Tyrrell Developments' *TouchPad*. But this product isn't just good for drawing, it's a whole new way to interface with your computer.

Fans of laptop PCs will be familiar with touch-sensitive pads that move the pointer; the TouchPad is simply one of these in a stand-alone unit consisting of the pad itself (42mm by 56mm), three buttons below it, and a padded cushion into which the unit slots to provide support for your wrist. It looks great, and because you are only working with a small screen it takes up quite a bit less space than a mouse and mat.

Tapping away

You can operate the pad with either your fingertip or the special pen provided. I preferred the pen for more accurate work, though it's easier to press the buttons if you use your finger: either method is simplicity itself. As with all new input devices there is a learning curve at first, but I got to grips with the pad much more quickly than on those disastrous occasions when I've been tempted to try a trackerball. If you're used to a laptop, you'll feel at home straightaway.

The pad supports what is called the 'tap gesture', which means you can simulate a mouse click by tapping the pad, once for a single and twice for a double-click. You can also drag and drop by placing the pointer over an object, tapping twice, holding your finger down after the second tap and dragging to your destination. This sounds a bit strange when you're used to single-click dragging with the mouse, but after a few minutes it becomes natural: in fact, thinking about it too much just confused me because the tapping had become so intuitive. That's the beauty of the TouchPad: it doesn't get in the way of your work, but just lets you get on with it.

When it comes to using the TouchPad as a graphics tool, it really shows how clumsy the mouse is. Because you're using a pen it's much easier to draw naturally, and tracing objects is a breeze. The TouchPad isn't a full-blown graphics tablet – it's smaller than even the most compact Wacom tablet and is not touch-sensitive, for a start – but unless you're a serious artist for whom the pressure-sensitivity of a tablet is essential, the TouchPad is easily good enough.

PS2Mouse

The TouchPad blends into the desktop environment more smoothly than most input devices, mainly because of its sister product, PS2Mouse. This little magic box plugs into the mouse port and accepts PS/2 devices, such as mice, trackerballs and, of course, touch pads. The more advanced version, PS2Mouse+, allows you to plug in your original mouse at the same time.

If you have an A7000 the TouchPad will plug straight into your machine, but on other machines PS2Mouse removes the need for serial-port driver software, which means that any program that works with the mouse will work with the TouchPad. You can even use the box to configure the mapping of Select, Menu and Adjust buttons if you wish, and to select pointer acceleration (the faster your finger movement, the higher the ratio of pointer to finger speed).

Conclusion

The TouchPad is great. I used to think that a mouse was all I needed, but now I use the pad equally, if not more, and I can see myself ditching my rodent in the near future. It's probably best to buy the PS2Mouse+ version so that, initially at least, you can switch easily between pad and mouse, but if you're looking for a nifty device to use with both art packages *and* the desktop, this is the one. AU

Product details

Product:	TouchPad
Price:	£34.95 inc. P&P (no VAT to pay), £29.95 if bought with PS2Mouse or PS2Mouse+
Product:	PS2Mouse
Price:	£24.95 inc. P&P (no VAT)
Product:	PS2Mouse+
Price:	£39.95 inc. P&P (no VAT)
Supplier:	Stuart Tyrrell Developments, PO Box 183, Oldham OL2 8FB
Tel:	0976 255256 (Orange)
Fax:	0870 164 1604
Email:	info@stdevel.demon.co.uk
WWW:	http://www.stdevel.demon.co.uk/
Pros:	Small footprint A pleasure to use Fully replaces the mouse Doesn't take up serial port No driver software required (except on A7000) With PS2Mouse+ you can use the mouse as well
Cons:	Need to buy PS2Mouse unless you have an A7000



System *lockout*

Stephen Scott looks at a solution to provide extra security for your computer...

For some Acorn users, there will always be situations where data protection is required. Schools and employers are two cases in point where it is undesirable for unauthorised people to tamper with the configuration and content of computers.

Post RISC OS 3.5 machines provide rudimentary protection devices within the *!Configure* application, but because it forms part of the boot sequence, it can be bypassed easily by holding down Shift. Then there are the Access settings within the Filer menu, which can also be modified with ease. So much for security.

It is thankful then, that there are practical solutions to this predicament available for nearly all versions of RISC OS. One such solution is *!DeskLock*, from iSV Products. *!DeskLock* provides a layer of protection over your desktop which the owner, or system administrator can have total control.

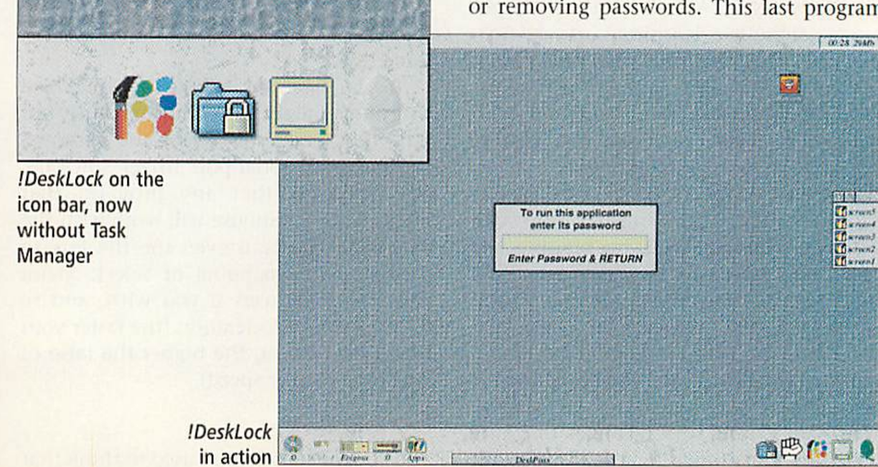
The package is suitable for RISC OS 3.1 or later, but iSV recommend that pre-RISC OS 3.5 owners install the new *!Boot* sequence, such as the one on Acorn's *!Browse* or *!RisCafe* CD-ROMs, or the one on our November 1998 cover CD-ROM, so that the *!DeskLock* installer can function properly. The version on review is 1.12 (9th June); later versions may be available – check with iSV for more details.

On a simple level, *!DeskLock* prevents selected directories or applications from being opened or run, without entering a password. More advanced facilities are at your disposal, however.

Files and directories can be prevented from unauthorised renaming or copying. Obey, !Configure and BASIC files are also prevented from being executed. The f12 and Break keys can be disabled, to stop resets from occurring, and to prevent access to the command line. The Task window is disabled, as well as particular *Command operations. In effect, almost any physical action on a file can be protected with *!DeskLock*.

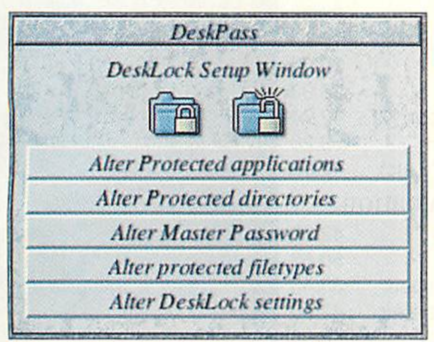
The product is presented, like all iSV software, in a CD jewel case, modified to hold a floppy disc, which contains *!DeskLock* and some associated utilities. Instead of printed documentation, iSV's standard disc based manual approach is employed, like *Penulator*, which I reviewed in the October 1998 issue.

The disc contains four programs; the disc manual, *!DeskInstl* – the !DeskLock installer, *!DeskKill* – which removes *!DeskLock* from your boot sequence, and *!DeskPass*, the utility for setting, renaming or removing passwords. This last program



***!DeskLock* on the icon bar, now without Task Manager**

***!DeskLock* in action**



The main *!DeskPass* configuration window

should not be kept on the same machine as *!DeskLock* itself, but on a backup disc, ready for use when it is required.

!DeskInstl and *!DeskKill* represent the best ways of installing and removing *!DeskLock*. *!DeskInstl* fixes *!DeskLock* within the *!System* directory, and adds a line to the *!System.!Boot* file. *!DeskKill* does the opposite, safely removing all traces of the software.

After installation and a reboot, the desktop will re-open with two noticeable changes; the presence of *!DeskLock* on the icon bar, and the greying out of the Task Manager icon. The Task Manager will not be available unless *!DeskLock* is quitted. Even then, the software will only quit once the master password has been entered. In effect, *!DeskLock* remains permanently in the background revealing itself when a user action requires it.

This is disclosed by the appearance of a small window in the middle of the desktop, asking for a password. While it waits for your input, the rest of the desktop is frozen and the mouse pointer is hidden. When the correct password has been entered, pressing Return will continue the desired action, while an incorrect password quits the action.

!DeskLock's presence on the iconbar could be considered pointless, because clicking on it reveals a window showing the protection mechanisms currently activated. These cannot be changed within *!DeskLock*, only with *!DeskPass*. Pressing Menu over the icon merely shows the standard Info and Quit items. Anybody trying to keep a tight rein over the number of icons on their icon bar, *!DeskLock* will disappoint. You cannot quit this front end and have it running in secret.

The manual recommends that the default passwords are altered straight away, through the use of *!DeskPass*. *!DeskPass* will not run while *!DeskLock* is still active, so it must be quitted using the default master password.

When *!DeskPass* is run, a window opens in the center of the screen containing a set of icons. Each icon opens a window specific to the running of *!DeskLock*. From top to bottom, you can alter protected applications, directories, the master password, protected filetypes, and *!DeskLock's* own internal settings.

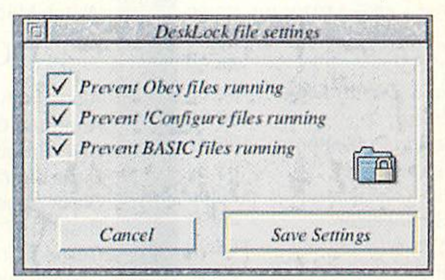
With applications and directories, the same window design is used. A scrollable pane lists the currently protected files, and their associated passwords. You can select a particular file, and delete or change its password. You can also add applications and folders to the list, either by dragging files into the window, or via a menu listing currently running programs. *!DeskPass* will actually scan the software and find its Task name entry, as normally listed in the Task Manager, and use this for identification purposes.

With the protected filetypes window, *!DeskLock* can prevent users from opening Obey files, Basic files and *!Configure* files, whichever one is ticked. Basic and Obey files could be used to defeat *!DeskLock*, which is one quoted reason in the manual for why this feature is included. The same password facility is activated when any of these files are run.

The final window, for *!DeskLock's* own settings, consists of four options with tick boxes. Each one determines whether *!DeskLock* should protect selected directories, applications, filer operations, or command line access. If any of the first three are unticked, then the password entry will not appear when such an action is made.

When Filer operations are disabled with *!DeskLock* the **NameDisc*, **NameDisk*, **AddTinyDir*, **Rename* and **Configure* commands are rendered unusable, as well as the normal password routine for copying by dragging files or renaming them from the Filer menu.

iSV advise that *!Zap* should not be kept on the same machine as *!DeskLock*, due to *!Zap's* inbuilt task window facility, which can bypass *!DeskLock* and compromise the computer's protection. iSV provide help for cases where the software has been tampered



Protecting security sensitive filetypes within *!DeskPass*

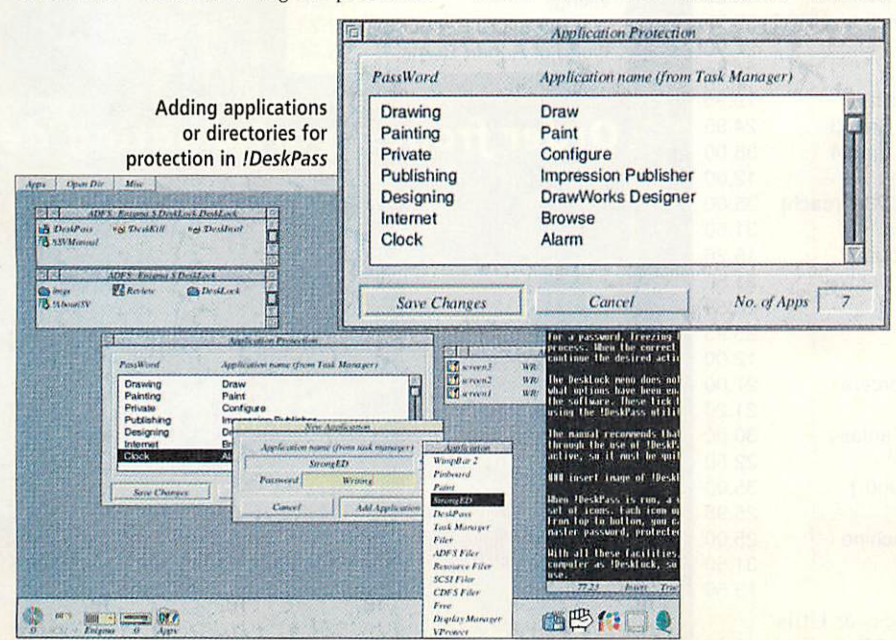
and resulted in a locked machine, so all is not lost if anything untoward should occur.

Conclusion

!DeskLock is a simple, easy to use solution, although first timers may feel daunted by the notion of what would happen if passwords were forgotten, leading to unusable files. A good read through of the manual clarifies most of these concerns. It is let down slightly by some spelling and grammatical errors.

The software itself gave no problems during installation and use, and the *!DeskPass* application is competently written. The method of setting up new passwords, and adding applications feels a little rough in terms of design and execution, but it works.

!DeskLock is a well-written product full of useful features that, considering its free inclusion of a site licence, is very fairly priced. AU



Adding applications or directories for protection in *!DeskPass*

Product details

Product:	**!DeskLock**
Price:	**£31.50 (price includes UK postage and packing; overseas orders add £2.00 carriage)**
Supplier:	**iSV Products, 86 Turnberry, Home Farm, Bracknell, Berkshire, RG12 8ZH**
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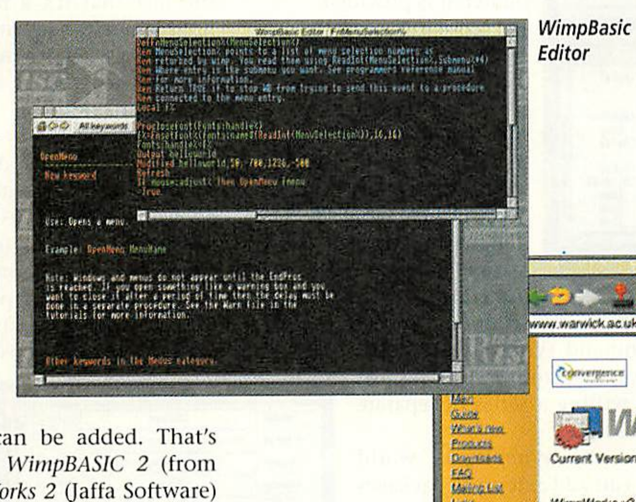
WIMP programming in BASIC

Steve Mumford looks at two packages designed to simplify the task

One of the great advantages of the original BBC Micro was its implementation of BASIC – it supported structured programming making it clear and easy to understand, plus a well-written reference guide to the language was supplied with the machine.

It provided a great opportunity for those who wanted to try their hand at programming, and I'm sure there are a lot of people out there who tapped in their first serious programs at a keyboard. From BBC BASIC, you could access most of the machine's major functions, so there was little need to progress to another language unless performance was critical.

Times change, and due to the increased overheads and relative complexity of WIMP systems such as RISC OS, writing your own WIMP-based program is a more demanding task. Due to all the extra housework that needs to be done, a lot of effort can be sunk into creating the raw multitasking framework of the program before even the tiniest amounts of flesh can be added. That's where systems like *WimpBASIC 2* (from Clares) and *WimpWorks 2* (Jaffa Software) come into play – both in their second incarnation, they provide prewritten code libraries, window, menu and event editors that allow the programmer to concentrate on the problem they want to solve without having to worry about writing run-of-the-mill maintenance code.



WimpBasic Editor

The good news is that both Clares and Jaffa Software are happy for you to release and distribute any applications that you create with their software, commercial or freeware, as long as suitable reference is made to the tools used and no attempt is made to reverse-engineer the code or support modules.

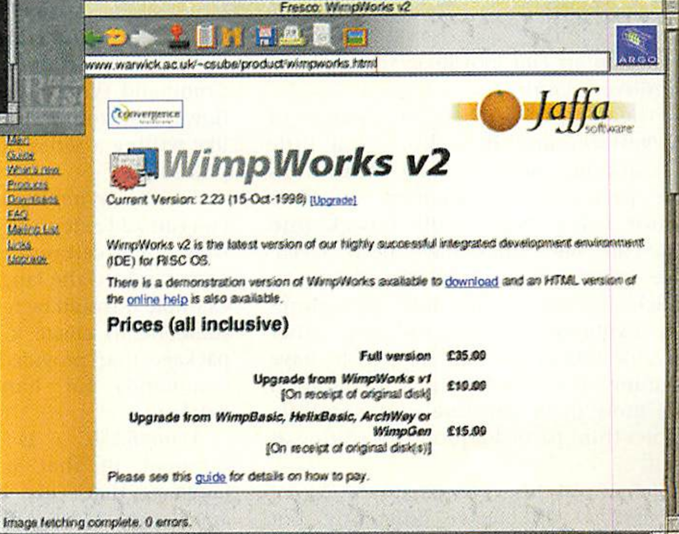
One of *WimpWorks'* advantages is that the code that it generates is completely stand-alone, and no extra module directories need to be included, this is because it converts your code into "real" BASIC, while *WimpBASIC's* libraries are held in a separate modules folder, which might prove to be a little cumbersome for some.

Getting Started

Installation of either package is straightforward – *WimpWorks* copies directly to a hard disc, and *WimpBASIC* requests registration details before personalising the installation disc. Copy protection for this application is provided on a 'credit' basis with two credits supplied as standard, the extra credit being provided in case of hard disc corruption. An uninstall option is available in case you want to move the application to another machine.

When it comes to creating a new program, both applications present the user with interfaces that share some common ideas – instead of ploughing straight into reams of code, the programmer approaches their embryonic application from almost the opposite direction, by designing the layout of the user interface. Windows are fairly easy to set up, with both packages using a variant on Acorn's original *FormEd* tool.

Menu construction is a little different: as well as deciding which entries to include in the menu, you can specify functions which are to be called when the item in question is selected. Once the windows and menus have been laid out, some simple events can be catered for –



WimpWorks prices

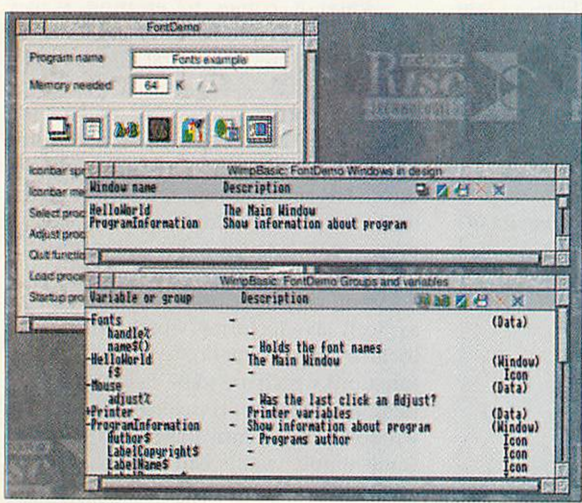
short procedures are written to be called automatically when the user clicks on the iconbar, for instance.

Finally, the rest of the program can be built around the framework that's been set up. At this stage, all that remains is to 'compile' the application and save it to disc, dealing with any errors using the built-in throwback systems.

The editors

Although both applications have editors similar in function, those provided with *WimpBASIC* are more tightly integrated into the package, and a couple of extra resource viewers are thrown in for good measure. As well as window, menu and code designers, *WimpBASIC* can provide you with lists of the variables and sprites used in your application.

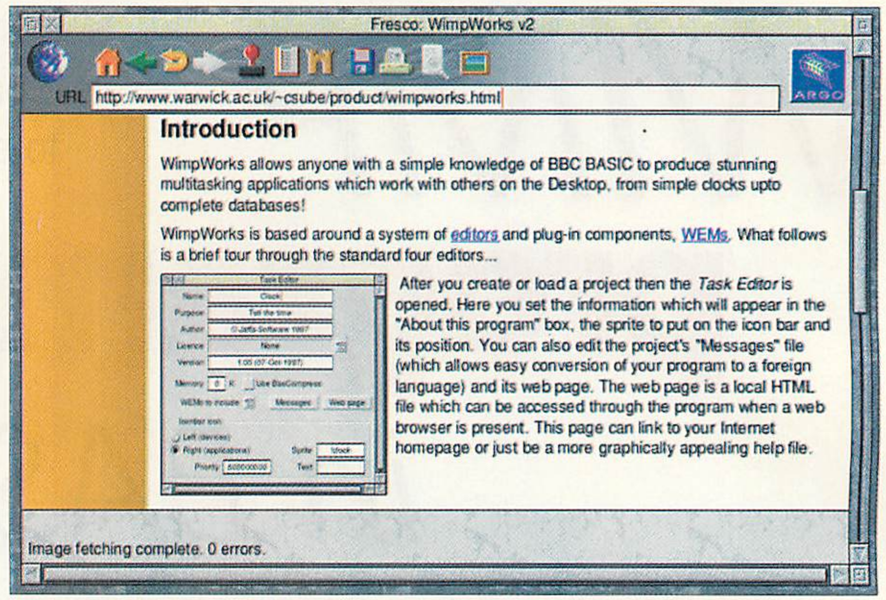
All the designers and viewers present their information in a consistent fashion, showing a summary of objects available to edit, and providing the ability to create new ones – a little similar in operation to the Filer, or the sprite overview in *Paint*. The individual editors are perhaps more familiar – windows are created in something a little like *FormEd*, and code is passed to an *Edit* lookalike, with syntax-sensitive colouring.



WimpBasic Filters

The connectivity between the core of *WimpWorks* and its editors is a little less formal, and window definitions are passed to a separate template editor before being pulled back into the core once they have been saved. The editing of code is carried out in much the same way, and procedures are exported to *Edit* (or any other suitable text editor you happen to have running) for modification. In addition the more open structure of *WimpWorks* allows third party additions for editing as well.

Because of this, the separate sections of *WimpWorks* do behave differently, but there are advantages – I much prefer using



WimpWorks' website

StrongEd to edit code, and having that facility makes the whole process a bit more comfortable for me.

Learning the WIMP

Although a lot of the groundwork is prepared for you, you'll still have to write your own sections of code to create fully-functional applications, so we need to consider two main areas. The first is to determine the language we'll be using to write the extra code and the second is to find out how much support material is provided.

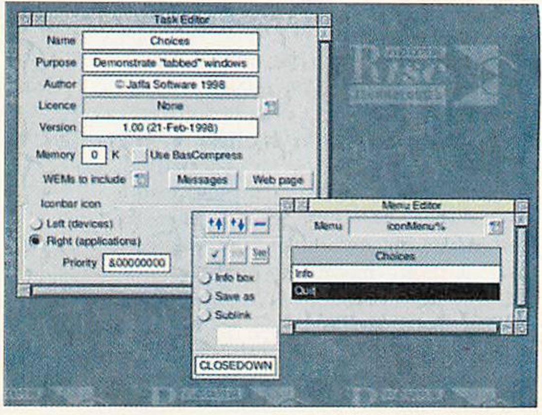
Looking first at *WimpWorks*, it uses the ARM BASIC module to provide the core of the language, which is understandably comforting to the aspiring WIMP programmer. The language has been extended to provide WIMP functionality by a mixture of extra procedures and keywords. Command syntax is the same, as is the flow of control – in fact, it's just like writing a series of separate procedures.

In the *WimpWorks* world you can add extension packages that add certain types of commands to the language, for example it would be feasible for someone to create a database package that provided specific commands for handling a database.

WimpBASIC is rather different in that it uses a language that's *like* BASIC in appearance. Most of the BASIC keywords have been re-implemented, along with a whole host of new ones, but because it's a separate language in its own right, there are subtle differences to be aware of. Firstly, although the language itself isn't case sensitive, the editor automatically maps typed commands into an aesthetic mixture of upper and lower case – strangely unsettling if you've been immersed in BASIC for any length of time.

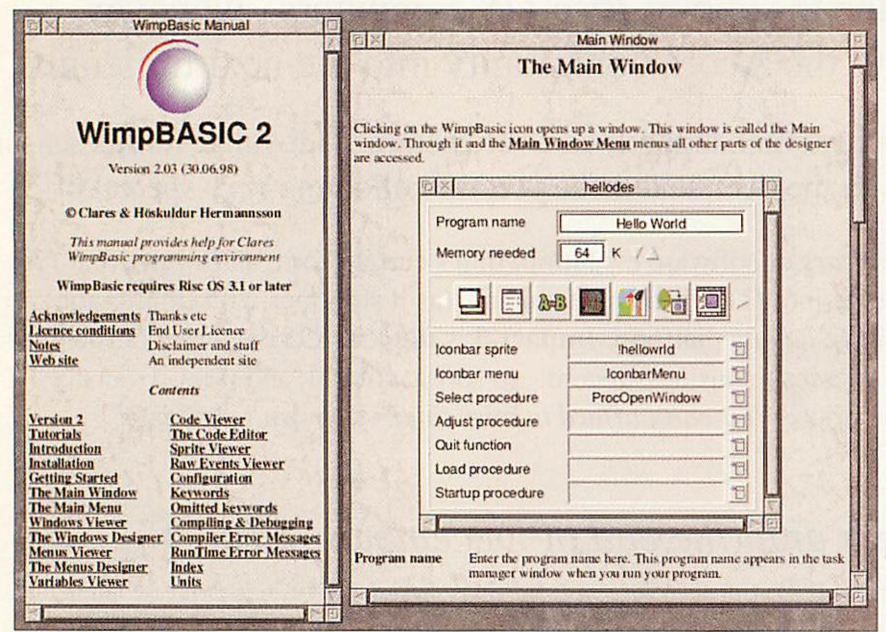
Other differences emerge, for example, the colon cannot be used as a command separator – you're only allowed one statement per line – and is used for a completely different purpose. However, the fact that it's a reimplementation of BASIC means that improvements can be made: for instance, altering the text in a writable icon is as simple as setting a string variable.

I'm happy to say that both packages come with plenty of documentation – both have hypertext manuals stored in *StrongHelp* format as well as command reference lists giving full details of the additional commands provided. *WimpWorks* is supplied with a paper manual as well, and I particularly liked the way in which associated commands



WimpWorks task menu





WimpBasic Manual using StrongHelp



WimpBasic website

were listed alongside each entry in the reference section – this feature makes it much easier to get to grips with the additions to the language.

Detailed walkthroughs are also provided, two in the *WimpWorks* manual, and five for *WimpBASIC*, but both applications provide numerous example programs on disc and a lot can be learned from examining how another programmer tackled a particular problem. There's an independent *WimpBASIC* web site that holds a whole variety of programs, classified according to their function – well worth a look if you've got web access.

Although you're bound to come up with ideas that won't be readily implementable, *WimpWorks* and *WimpBASIC* both have a strong complement of prewritten functions – for instance, both packages allow you to load and display sprites and Draw files as well as plot simple geometric shapes, and *WimpWorks* is supplied with an extension module that allows you to create your own Draw files. It's also possible to extend *WimpWorks'* functionality by writing your own plugin editors to complement those already present.

More Information

If you want to find out more about either of these programs, the best places to start are probably their supporting websites.

An independent site has been set up for *WimpBASIC* at *http://www.treknet.is/wb/* and is maintained by one of its beta-testers. The site holds a code library, hints and tips sections, *WimpBASIC* updates and more, but some of these areas do appear to be a little sparse or out-of-date. However, the site is home to a large array of example applications and tutorials, so could be useful for the struggling programmer.

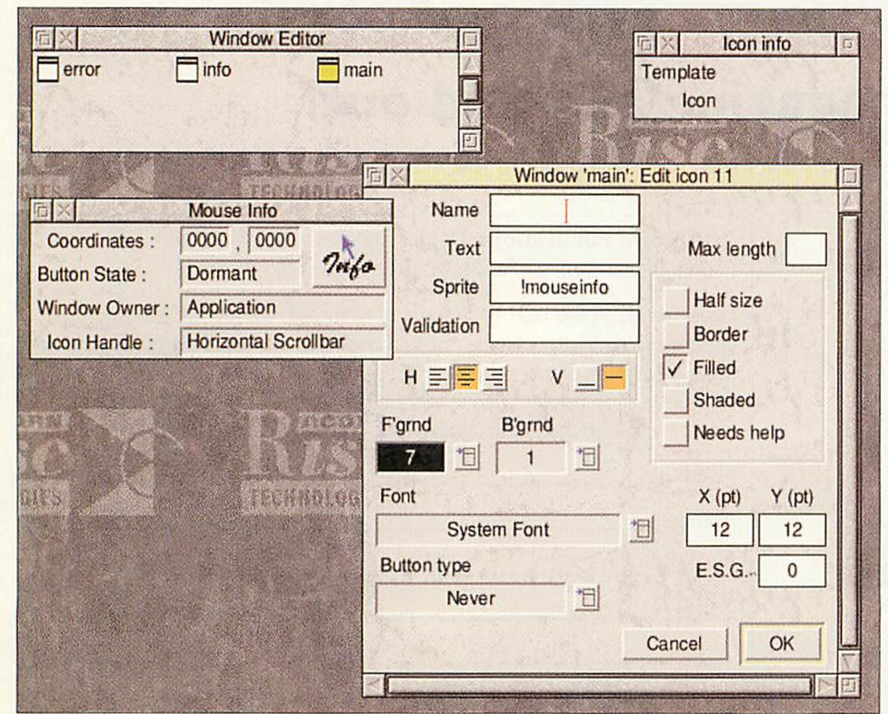
The *WimpWorks* website is maintained by the authors of the software, and is held at *http://www.cryogen.com/jaffa/*. There are two areas of particular interest – it's possible to download a demonstration version of *WimpWorks* for evaluation, and owners of newer copies of the application will be able to download updates directly from the website. There's also a document detailing a *WimpWorks* feature named *ActiveApps*, a versatile message-passing system that even function across networks.

In Summary

I was greatly impressed by both of these packages – once you're familiar with the particular idiosyncracies of either application, you can start putting a program together without having to worry about how you're going to code the printing function or file transfer mechanisms. By removing a lot of the black magic associated with WIMP programming, *WimpWorks* and *WimpBASIC* aim to make Acorn's GUI more accessible to the masses, and for the most part they succeed.

If you're thinking about which package to go for, I'm afraid you're in for a tough choice – I prefer *WimpWorks'* more accessible language, but I get the feeling that it might be easier managing large projects under *WimpBASIC*.

Finally, if you're planning to try your hand at coding using one of these applications, I'd recommend investing in a WIMP BASIC programming book – a number are available – because although both packages do a relatively good job at introducing the procedures involved, it's particularly helpful to understand a little of what goes on underneath the surface. AU



WimpWorks window edit


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An impressive, state-of-the-art, multi-function DVD and Compact Disc device, is now available for the Acorn platform with the Eesox DVD-RAM drive. This drive uses rewriteable DVD-RAM cartridges with a capacity of either 5.2GB or 2.6GB. With cartridges costing 0.5 pence per Megabyte, this drive is essential for anyone who needs large amounts of storage, and it is an ideal device for backing up your data.
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"Convergence"
A once-in-a-lifetime limited print offer
following a very positive public response towards Astute Graphics' latest illustration entitled "Convergence" (as featured on last month's front cover), it has been decided to commit the unique design to a limited high quality hand-made litho print run of 150. Each copy is presented in an elegant glass-fronted frame and measures approximately 50cm (20in) square as well as being signed and numbered by the artist, Nicholas van der Walle. Designed and published from start to end on a RiscPC primarily using Spacetech's Photodesk 3, the end result will become a centrepiece of attention wherever on display.
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Get cracking

Ian Molton's machine plays when he's away

How much time do you think your computer spends doing something useful? Say, opening a window, dragging something, redrawing a picture, processing a key click? All these processes are short term – that is to say, they only occupy the processor's attention while they are actually happening.

So what happens the rest of the time? Well, the computer has to perform some housekeeping functions, but other than that, it just sits there and does absolutely nothing, waiting for you to get it to do something else.

In the past it had been suggested that all this wasted computing power could be put to good use if it could be pooled. But it took the arrival of mass access to the Internet to make it feasible and in 1997, Adam L. Beberg set up the project *distributed.net* to demonstrate just what can be done.

The logic behind this is that there are a lot of huge numerical problems around, which require so much processing power that it is hard to find machines to run them on, so why not use more than one machine?

This is just what *distributed.net* have done – they have set up a vast network of thousands of volunteer computers, all of which are given part of a large task to do, and when they have calculated their portion of the task, they report back their answer, via the Internet, and collect another part of the task to process.

Project Bovine RC5-64

So with these thousands of machines all available to work together we have, as *distributed.net* would put it, "The world's fastest computer" but what do we do with it?

One use for the system, is "cracking" encryption codes, and RSA Security have offered a prize if *distributed.net* crack their RC5 encryption system.

To encourage people to help out, *distributed.net* are offering a prize of up to $2000 to the person who breaks the code. Another incentive is that "teams" can be formed, and people can see their own and their team's progress in the global rankings.

The software to perform the cracking operation as wel as look after the down- and uploading of data blocks has been converted to many different computer platforms which is where Acorn users come in – the *distributed.net* client software also works on RISC OS, so we can join in too.

About eight weeks ago we were placed around 4000th, but at the time of writing we had reached 712th and still climbing and that's with about 50 players on our team, imagine what we could do with 100 players, or 500 or even 1000 we could easily make it into the top 100.

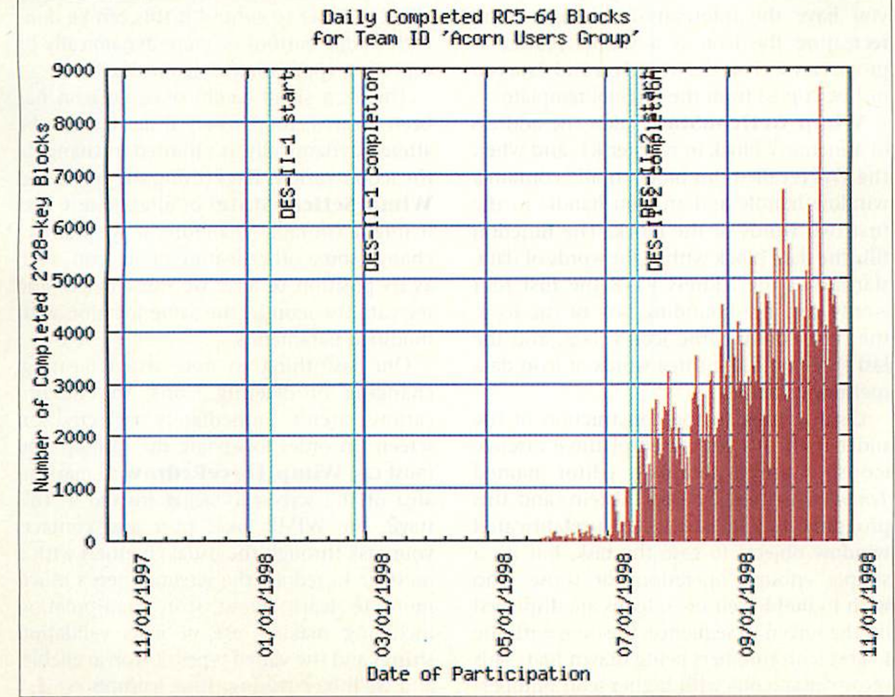
Why would we want to do that? Because all over the world people look to see which teams are doing the best, and while it's true that the platform itself isn't really important if RISC OS is there with the front-runners it gets noticed.

And the great thing is that once it's set up you don't have to do a thing, you just let it run in the background, ideally never switching your machine off. To make it even easier the RISC OS software is on the cover disc.

Once you've got the system running and your machine has delivered its first completed blocks to distributed.net you can then join the Acorn Users Group (#4266) and together our machines can beat the rest of the world so get it loaded, get it running and get cracking. AU

Why is it called Project Bovine?

We're not entirely sure but it's probably because the computer collective is slowly munching its way through the field of data blocks.



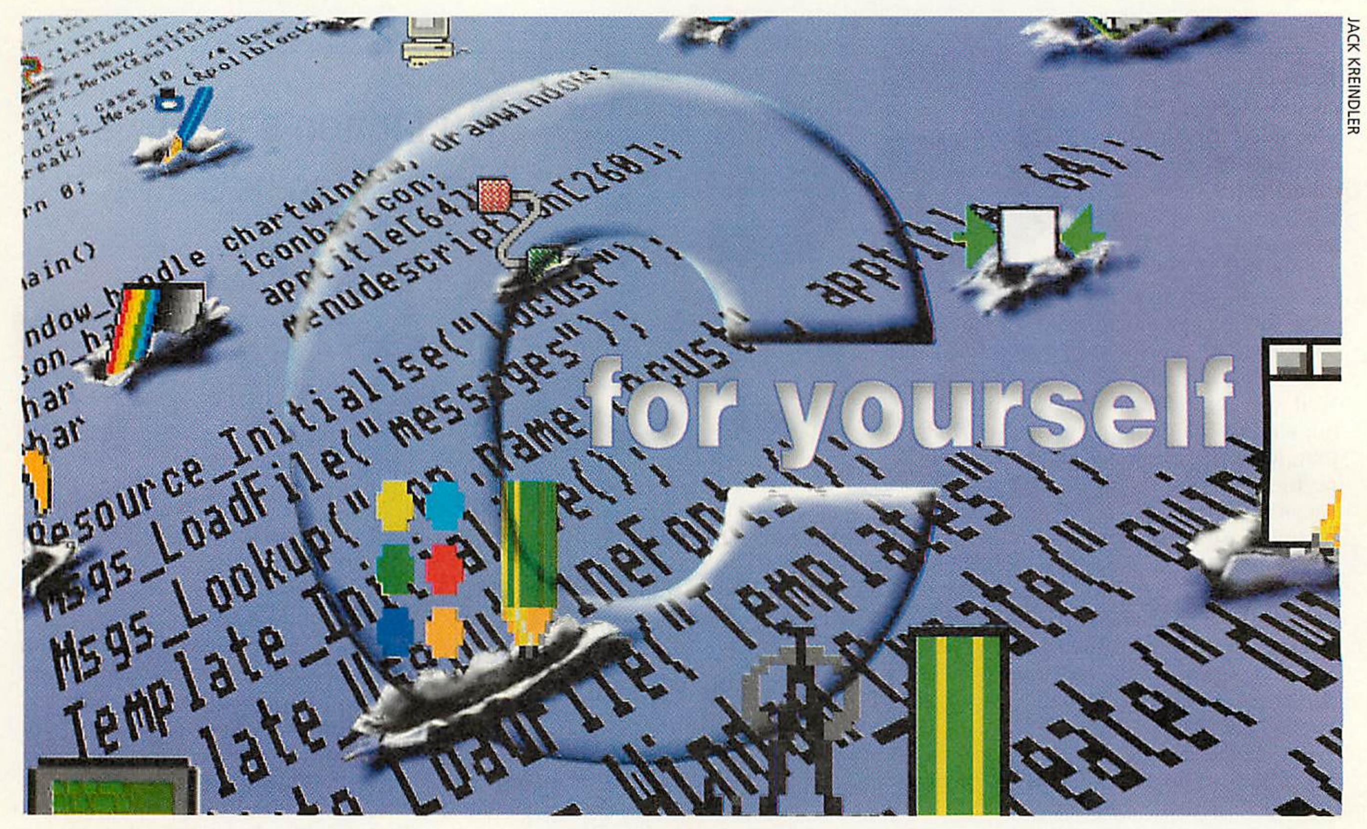
The number of blocks processed daily by the Acorn User Group

Internet contacts

Distributed.net
http://www.distributed.net/

Acorn User Cracking Group web page
http://www.alphapro.demon.co.uk/Acorn/rc5des.html

Acorn RC5 mailing list
mailto:maillist@alphapro.demon.co.uk with a subject of SIGNON acornrc5



JACK KREINDLER

Creating icons and modifying them **Steve Mumford** takes control

In the process of designing the colour selection tools last month, we came across the use of slider bars and nudge buttons to provide the user with a more intuitive method for choosing appropriate values. This month, I'm looking in greater detail at creating, displaying and modifying icons using the standard WIMP system calls.

Until now, we've made use of template editors to set up the general layout of a window, and any icons we wished to include have been created at that stage. Although this makes the initial process of producing a window a lot easier, it's not possible to rely solely on this technique there will always be times when you need a little more flexibility.

The two main SWI functions that we'll be making use of are **Wimp_ CreateIcon** and **Wimp_ DeleteIcon**, but in order to be able to modify an icon's attributes, we need to be able to quiz the icon itself and store the returned details somewhere — that's where **Wimp_ GetIconState** comes in.

In order to describe an icon's attributes fully, we need to store several parameters. Every icon has a window handle and icon handle, a four-word bounding box specifying its minimum and maximum x and y sizes, a word of flags that store the icon's behaviour and colour, and three words of data that can hold pointers to blocks of memory, perhaps holding an indirected string of text or a sprite, depending on the nature of the icon. In order to create an icon, these values are stored in the above sequence in a memory block whose address is stored in register R1 and **Wimp_CreateIcon** is called. The icon itself has now been defined but still needs to be displayed, **Wimp_ForceRedraw** is the simplest way of achieving this.

Instead of creating all your icons from scratch, the easiest way of learning how to control them is to do all the hard design using a template editor, make a note of the icon numbers then use **Wimp_GetIcon State** to read those details into data structures created in your program. Once you have the information, changing and recreating the icon is a simple matter as properties such as the icon flags and data can just be copied from the original template.

Wimp_GetIconState takes the address of a memory block in register R1, and when the SWI is called this block should contain a window handle and an icon handle in the first two words of the block. The function fills the data block with eight words of data, starting at the address R1+8 the first four words give the bounding box of the icon, the next contains the icon's flags, and the last three hold the three words of icon data mentioned above.

Getting back to the construction of the slider itself, it's composed of three discrete icons. I use a template editor named *TemplEd*, written by Dick Alstein, and this program has a stock of prefabricated window objects to ease the task, but it's a simple enough operation for those who wish to build their own. Icons are displayed on the screen in sequence, the ones with the lowest icon numbers being drawn first. This means that icons with higher icon numbers are displayed over the top of any already on the screen and it's this behaviour that we need to make use of.

The slider consists of a rectangular 'well' to enclose the area of the movable slider bar, a white background strip that runs almost the entire length of the well, and finally the movable bar itself, drawn as a filled rectangle directly over the top of the slider background. Changing the maximum x extent alters the amount of coverage the bar takes up, and all that remains to be done is to allow the user to control it this can be done with nudge buttons or more dynamically by capturing appropriate drag messages.

There's a small catch: once an icon has been created, there's very little that can be altered dynamically, it's limited to changing the icon's various flags (using the command **Wimp_SetIconState**) or altering any text it might contain. Therefore, if we want to change some other feature of an icon, such as its position or size, we must delete and recreate the icon in the same location with modified parameters.

One last thing to note when creating, changing or deleting icons, the modifications aren't immediately reflected on screen. In order to update the display, you must call **Wimp_ForceRedraw** to mark an area of the screen as being invalid at this stage, the WIMP takes over and contacts your task through the usual channels with a message to redraw the screen. There's much more to learn about icon manipulation including making use of icon validation strings and the varied types of icon available, and we'll be covering these features as our label application develops. AU

Deeper and *down*

Graham Nelson reviews RCI's new port of *Descent*

What comes next in the following sequence: *Wolfenstein 3D, Doom, Doom II, ...*? If you're a fan of the texture-mapped maze boom of the mid-1990s, you'll probably say *Quake*, the third in the line produced by id software.

id (really, no capitals) had come to an obvious, yet audacious, realisation: that processor power had hit the point where real-time texture-mapping onto 3D structures was finally possible. There was nothing very new about mazes drawn from a 'first-person perspective' point of view, that is, drawn as if seen by the player, rather than looking down from above.

The aptly-named Atari video game *WayOut* had any number of crude Sinclair Spectrum impersonators. But in the days of 8-bit processors, you'd be lucky to get walls of solid opaque green (say) in uniformly bright lighting. Today you can have tapestries seen by the light of spluttering flares thrown upwards and at an angle. We haven't yet reached real-time raytracing, with shiny vases and reflective tabletops, but give it five years. Texture mapping is already moving into hardware.

The trouble with texture-mapping games is, in a way, also their salvation. If you rush up really close to a wall, the detail on it gets blockier and chunkier, losing all believability: what used to be a tapestry is now a pixellated mess. This is bound to happen, because the computer can't store every last graphic in such detail that you can always zoom in for finer and finer structure. The solution is to make the game-play sufficiently fast and furious that this doesn't really matter, and in many ways the clever thing about *Doom* or *Quake* isn't the graphics: it's the sudden rush of adrenaline as the player enters an unfamiliar, heavily monster-infested area, and is attacked on all sides.

So: there was *Wolfenstein 3D*, a fairly crude game with slightly disturbing overtones – I remember being faintly alarmed to discover that my six-year-old cousin had become expert at throwing virtual knives into the backs of virtual Nazis – and then there was *Doom*, when the maze game came of age. But *Doom* had one big limitation: its levels were constrained to be basically two-dimensional, however this was disguised with elegant staircases and ramps.

Pressing Tab to pull up a map showed that the layout made decent sense in 2D; besides, guns always fired horizontally. The eventual sequel was *Quake*, with lavish internal decor and a penchant for catwalks, throwing things upward through crevices, diving at angles through water and so on. But *Quake* was a long time coming, and Interplay Productions had long since brought out *Descent*.

This was all four years ago, and the PC world is up to *Quake II* and *Descent 3*; but RCI are now selling solid Acorn ports of *Doom* and *Descent*, and *Quake* has unofficially existed in a freeware port for six months or more; RCI's official version should be out by the time you read this.

Installations

Like *Quake*, this game is fully three-dimensional – or at least it's a 3D environment bolted together from flat oblong surfaces, as if the entire world had been bought as a self-assembly kit at MFI. That's all right, though, as the domain to be descended is a sequence of space stations, lunar mining camps and so on, where girders and brutal aesthetics are only to be expected.

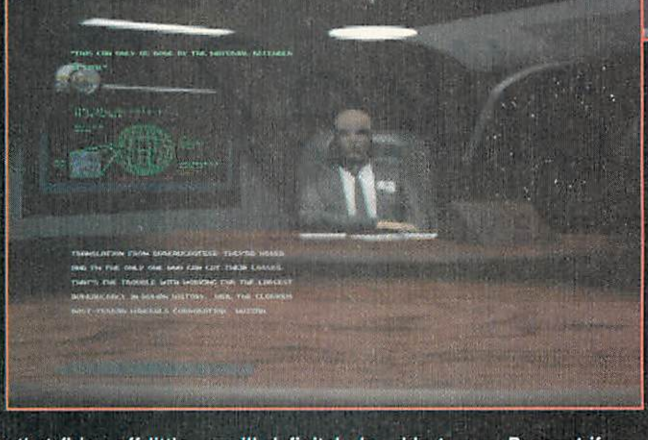
As a glimpse at the file specifications (*www.descent2.com/ddn/specs*) reveals, the mines are made up of cuboidal regions joined at angles with doors and textures added to some of the sides. And yet the overall maps, revealed gradually as each level is explored, look like those schematic posters of Tube stations put up when there are engineering works on the London Underground. Rotating or zooming in/out in map-display mode, the levels have an elegance of line about them, with sumps



and corridors in graceful arcs.

But those are my second impressions. My first thought was that it feels like a kind of indoor version of the BBC Micro game *Elite*, because the opposition is made up of colourful spacecraft glued together from convex polyhedra. And the walls were garish, and left me a little unimpressed, but then I turned up the resolution – RCI's port has a nifty feature allowing anything from 320 by 200 to 1024 by 768, the higher-end options intended for *Phoebe*.

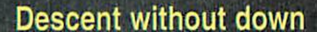
I've settled on 640 by 400 at 32-bit colour depth, which gives highly responsive play with no appreciable jerkiness or lost frames.



I'd also recommend cranking up the brightness level to maximum, unless you have good night vision and live in an unlit country cottage. Even at maximum brightness, the light level is still artfully controlled by the level designers, and it took me a while to twig that firing off little triangular flares is an essential tactic.

Acorn *Descent* comes as a bright red disc containing an installation program and the 'player', together with a high-volume PC release of 'Descent I and II: The Definitive Collection', a three-compact-disc gatefold of *Descent I*, *Descent II*, some extra fan-written levels for both, and a *Descent II* level editor. This is a little tantalising, as the Acorn player can only run *Descent I*, though it will play the music on the second CD as a background track if you like (I didn't, but then I've never seen the point in giving computer games lift-music).

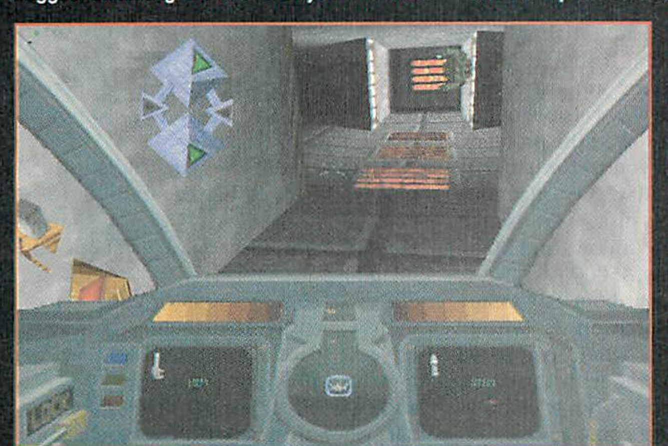
The game needs at least 8M free RAM and, although RCI claim that it can be played on a non-StrongARM machine and suggest configuration settings to make this feasible, it crashed out with a stack backtrace on my father's (13Mb) Risc PC 700. Probably this was only teething trouble, as I had an early-ish copy of the game. All the same, I'd suggest checking with RCI that your machine will definitely be able to run *Descent* if you haven't a StrongARM.



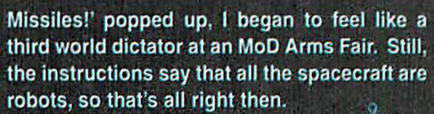
Descent without down

Perhaps it's time to talk about the plot, but honestly, there isn't much of one. A selection of the solar system's finest mining operations, military research bases and so on, have been taken over by the robots manning them (or roboting them, or something like that) and it seems the only solution is to destroy the bases altogether, pausing to rescue any trapped human hostages for bonus points.

There were times when, like Sigourney Weaver in *Aliens*, I felt like saying 'Just nuke the whole planet from orbit, it's the only way to be sure': instead you have to shoot up the reactor core, usually down at the bottom (hence 'descent'), and then get out again in the 45 seconds before it blows. Not nearly as easy it sounds, because the lights are suddenly on the blink, what with the reactor core being in a mess and all. My standard tactic is to panic, then hit the 'map mode' button, which conveniently stops time while I sit and plan out how to escape. But then, I have no pride. I play at 'trainee' level of difficulty, too. (On 'insane' level, I'm unable even to survive the first chamber of level 1.)



The morality of *Descent* is, well, I think I'm going to give up on this paragraph right now, except to say that after enough messages like '6 Concussion Missiles!' popped up, I began to feel like a third world dictator at an MoD Arms Fair. Still, the instructions say that all the spacecraft are robots, so that's all right then.



Thanks to its orbital habitat, *Descent* has no concept of gravity, so in a sense the one thing you never do is descend. There's no sense of up versus down, except that many of the chambers have light-panels in the 'ceilings'. NASA used to be surprised that astronauts could only relax in space stations when they had established a 'right way up' for themselves and the furniture, but after playing *Descent*, I begin to see why.

My first few games were hopelessly confused. The player's spacecraft can be tilted to either side in both axes, 'left-right' and 'up-down', besides which it can fly forwards or backwards whichever way it's pointing: learning to get around is like taking up a new musical instrument. You learn fast, but in the mean time, we're talking serious embarrassment.

I have been playing *Descent* daily for three weeks now (it's a dirty job, but someone's got to do it) and the sum total of my achievement is that I've reached the end-zone of level 3 on mission 1. The reactor-core on this level is guarded by purple areas, which spontaneously generate robots, so that going anywhere near them is like sticking your arm into a wasp's nest. That's my excuse, anyway. This is a very nice game: better than the screenshots on these pages might suggest.

Product details

Product:	Descent: Acorn Version
Supplier:	R-Comp Interactive, 22 Robert Moffat, High Leigh, Knutsford, Cheshire WA16 6PS
Tel:	01925 755043
Fax:	01925 757377
Email:	rci@rcomp.co.uk
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Pros:	• Classic • Many levels with plenty of game play • Fast and a good deal of fun
Cons:	• Not always beautiful • Slightly behind the state of the art

Zip Plus

Share and share alike?

John Pettigrew moves data with Zip Plus



The *Zip plus* drive from Iomega is a relatively new product. Basic Zip drives, with their 96 Mb disks, are becoming very common on Macs and Windows machines for backups and sharing information between computers. The Zip Plus is different because it can be used on either the parallel (printer) port or a SCSI chain. This means that it can be plugged into Macs, PCs and Acorns.

The blue Zip drives are well designed and attractive. Able to be placed on their side or face down, they can fit into very small spaces. There is also a pass-through for you to plug your printer into (and Impression dongles and Turbodrivers do work through the drive).

I tested my Zip Plus on three computers – a Macintosh LCIII, a Compaq Windows 95 computer and my own A5000. The drivers for the first two are Iomega's; the Acorn driver was *PowerZip+* from Alsystems.

Macintosh

Installation on the Macintosh requires a CD-ROM drive. A word of warning – when the installer is run, you are asked whether this is your first installation. Say 'No', even it is. The only difference is that if you say 'Yes', you are treated to a long and boring animated presentation about the Zip drive, which you should already know if you've bought one.

The *Zip Tools* software gives access to password protection of your disks and formatting and backup programmes, among others. However, if you need to move data to or from Macs, you will also need software to read DOS disks.

One problem with the Zip plus on SCSI connections, like the Mac's, is that it must be the only device on the chain. That is, it's not really suitable for permanent connection but, for occasional use, it's fine.

Windows 95

The Windows drivers are supplied on a floppy disk rather than CD. On this machine, I decided to try another facility offered by Iomega – the *Guest* programme. This is an alternative to installing drivers on a machine you aren't going to use often, which can be useful, especially on Windows machines.

To find this took quite a bit of digging around on the floppy disk (about three folders deep) but, once I'd found it, again it worked well. Simply double-clicking the Guest95 icon resulted in the PC recognising and being able to read and write the drive.

RISC OS

Installation of the PowerZip+ software is typically Acorn – drag off the floppy onto the hard disk and run. However, I did have a few problems. First, when it arrived, it totally failed to recognise the drive. This was apparently due to my having been sent an old version of the driver; the replacement was rapidly in my hands and worked fine.

The second problem was that my A5000 refused to read DOS format disks, even though the advertising and documentation said that it should. Many e-mails to the Alsystems support people finally produced a newer version of the *DosFS* module, which solved the problem. *PowerMgr* even allows you to format DOS Zip disks on your RISC OS machine. However, the Zip Tools disk, even though it is readable on both Windows and Macs, is not accessible on my A5000.

My main complaint about PowerZip+ is that the documentation is wholly inadequate, especially when compared with the reams that come with the drive. In addition, the support is not as good as other companies I have come across.

Summary

Using the Zip plus drive, it is possible to move data extremely easily between computers, even if the other person does not have a Zip drive. My first real use, taking a postscript file to a printing bureau, worked perfectly – formatting a DOS disk using *PowerMgr*, printing to a file and simply taking the file to the shop.

My only real reservation is about the drive itself. There has been much publicity about the 'click of death', which was apparently due to a manufacturing problem (now sorted out), and the Zip plus cannot be used in SCSI chains (contrary to Iomega's original publicity).

However, my drive has an annoying buzzing sound when a disk is in the drive, which is worrying when the drives at work are almost totally silent. Alsystems' only response to date has been that they will send the drive back to their suppliers, which will take several weeks.

However, this notwithstanding, the Zip plus is an excellent solution to the portability problem, if you get a fully working one. The price (about £185 including PowerZip+) is quite high, with Zip disks costing about £8 each, certainly more expensive than buying a new hard drive. If space is your only concern, get a new hard disk, but if you need to back up and especially if you need to exchange data, they are a very good option. AU

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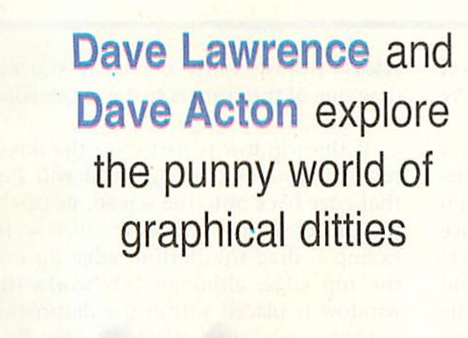
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Moine's a point

Author: Nick Kennedy

One of the most popular programs this year has been the crazy pointer. The first wibbly wobbly pointer appeared way back in June 1996 as a simple Basic program by Andrew Bolt. The desktop version followed in April this year from Dennis Ranke, but without the wibble. Then in July, Alex Thoukydides added this back in for what we thought was the end of this little series!

This update from **Nick Kennedy** has proved necessary as it turned out that Alex's code didn't run on a Risc PC 600 or anything earlier. This was most likely due to the change in the re-entrancy status of OS_Word 21.

"The program works on a vsync event. Code run on this event cannot use non-reentrant SWI's. The PRM's define the reentrancy of OS_Word 21,0 as 'not defined' which means that it is subject to change.

"The way round this problem was to change the code to run on a ticker event using 'OS_CallEvery' instead of the vsync. This might be slower, although I obviously can't easily test it without using a more recent machine. However, it works.

"While I was at it, I corrected the error trapping code in the initialisation routines which had a couple of MOV's the wrong way round.

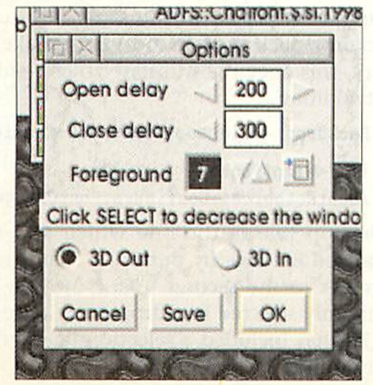
"To change the interval between updates, alter the value of the variable 'interval' near the top of the program.

Of little help to you

Author: Jamie Wilson

Well, in fact this could be of great help to you in a little kind of way. **Jamie Wilson** didn't like the bulky standard interactive help window, preferring instead the on-the-spot help style of Windoze. The result is *SmallHelp*.

When you run *SmallHelp* for the first time, its icon will appear on the icon bar. This allows you to change certain settings and see who it's written by. Since *SmallHelp* is the sort of utility you might just want to hide out of the way, when you are happy with the settings you can remove the -iconbar parameter at the end of the last line of the *!SmallHelp.!Run* file. Next time the application is loaded, it will just lurk in the background. To set up *SmallHelp*, select *Options* from the iconbar menu.



"The open delay is the time in centiseconds between when the mouse stops moving and the help window appears. If you do not wish it to appear unless asked for by pressing F10, then type 'OFF' or increase it past 999. If you have a fast machine and you want it trailing the mouse, you can set it to 0 so it appears immediately.

"The close delay is the time in centiseconds between when the help window was opened and the help window is closed. If you do not wish it to close unless the pointer is moved then type 'OFF' or increase it past 999. If you are a very fast reader you can set it so that the window is open for 1 centisecond."

The other options are self-explanatory and determine the appearance of the help window. *SmallHelp* uses *INFO regular Justin Fletcher's wimp libraries.

As with all applications and programs that you might like to modify, *SmallHelp* must be copied to a writable medium (eg your hard disc) before tinkering with the *!Run* file. You might like to install *SmallHelp* automatically on boot-up, in which case put it in *$.!Boot.Choices.Boot.Tasks*.







Stretch Armstrong

Author: Thomas Leonard

No matter how many bells and whistles are available on the desktop there will always be room for more. Our most recent contribution to the world of desktop gadgetry comes from **Thomas Leonard**. Despite pioneering a number of features in the realms of the WIMP interface, RISC OS is somewhat lacking in some fields. Windows allows a window to be dragged by any edge or corner, X even adds little skinny boxes round the outsides of its windows to indicate a drag is possible. We're limited to moving with the title bar and dragging the bottom right hand corner. Thomas' utility *Resize* provides yet another method of, well, resizing windows.

The utility runs as a filter and lives in a relocatable module. Simply double-click it to start it running. You'll have to *RmKill it to remove it. Once loaded, to use it move to the 'back' icon (the one in the top left hand corner), press and *hold down* Adjust. If the window can be resized it will be outlined and covered in a 3x3 grid of squares. Move the mouse over the edge you want to move (still holding down Adjust), drag the edge to its new position and finally release Adjust. Fairly obviously you can drag one of the corners to drag both edges at once.

If the window is partly off the screen moving towards the edge of it will shift that edge back onto the screen. Be careful if you cross the window over – for example, drag the bottom edge up over the top edge, although this works (the window is placed within the destination outline and not reflected!) the final position will be slightly wrong due to the size of the scroll bars and title bar. This may mean that the title bar goes off the top of the screen!

Backdraft

Author: Jan Vibe

I mean *drop*. Well, you know how it is – we get so many submissions involved backdrops we've run clean out of puns. Of course, under normal circumstances, we'd just employ a pun of the author's name, but since the author in this case is none other than the great Dane **Jan Vibe**, we've run out of puns for him too. Oh well, you'll just have to be content with the program.

"The boot sequence used in the RISC OS 3.7 is, to say the least, a complicated affair. Among a lot of other tasks it performs on startup, is the selection of a backdrop.

"The desktop backdrops are situated in *$.!Boot.Resources.Configure.Textures*. In this directory is a Basic program which selects a random backdrop. I thought that this program was run when the computer was booted, and it puzzled me that the backdrop was always the same one (T2).

"After a lot of detective work, I found out that the Basic program is never invoked – instead the backdrop is set by an obey file, *Configure*, in the *$.!Boot.Choices.Boot.Tasks* directory.

"The Basic program is also a bit simple, in that it can only select between the backdrops in *$.!Boot.Resources.Configure.Textures*, and adding more sprites would mean that the program would have to be rewritten to be able to select the new backdrops.

"I wanted a random backdrop every time I booted my computer, and to be able to add new backdrops easily. so I wrote the application *!Textures*, which randomly selects one of the backdrops in its own directory. It scans its own directory for sprites when it is invoked, so new backdrops can be added by copying the backdrop to the *!Textures* directory.

"If this application is placed in the *$.!Boot.Choices.Boot.Tasks* directory, it will set a randomly selected backdrop up each time the computer is booted. Unfortunately, the obey file *Configure* is placed in the same directory, and will change the backdrop back to plain old T2. To make the *!Textures* application work, this obey file will have to be rendered inactive. It consists of two lines:

```
Backdrop -tile BootResources:Configure.Textures.T2

if "<Wimp$Font>" <> "" then
/BootResources:Configure.FontChange
```

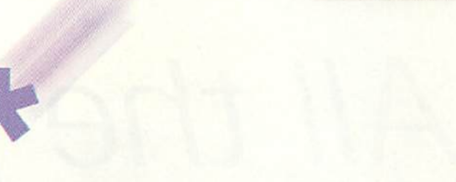
"The top line is the one which sets the backdrop. It can be rendered inactive by putting a '|' in front of it. Dont make any changes to the second line. Now, the computer will display a randomly selected backdrop every time it is booted."

Jan has included a selection of interesting backdrops by way of examples.







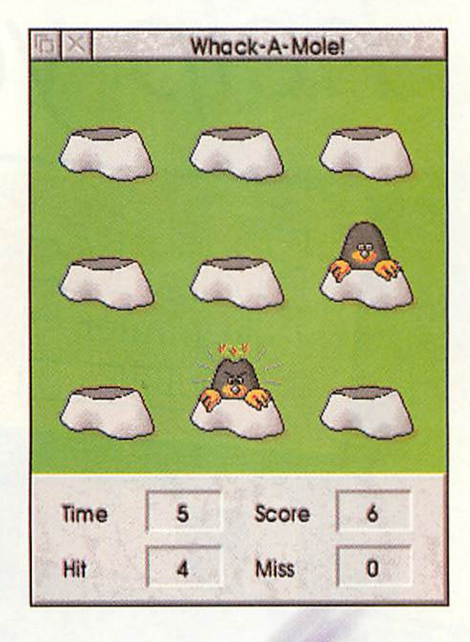


Subterranean mammal-bashing (part II)

Author: William Curson

Let us take you back, gentle reader, to the October 98 issue in which we featured a delightful game for all the family entitled *Whack-A-Mole*. We intimated that a few appropriate sound effects might add a new dimension to Philip Mellor's desktop original. Well, good news gentle reader – **William Curson** of picturesque Driffield has obliged. So make haste, and run the all new *Whack-A-Mole*, and relax to the soothing chrrr-doings as you thump the furry little blighters back into their underground dwellings.

"I have edited PROCset_icon_string so that every time it is sent a 'whacked mole' sprite to be drawn by PROCclick_mole it sets off an appropriate sound effect. I have also added two options to the menu *Sound On/Off* and *Sound Dir*. The latter opens the sounds directory within which is the RM file *Hit!* which is the sound effect. This sound effect can be replaced with another as the user sees fit (full details of how to use these options are included in the *!Help* application inside *!WhakAmole*). "



Ang man

Author: Peter Howkins

Peter Howkins has proved he's as mad as the rest of us – *AngTastic* is a 1K game inspired by the dungeons and dragons-fest that is Angband. The idea is to collect the flasks of oil while avoiding the red worms. As you progress up the levels, more and more red ws, sorry, worms appear making your yellow ! – sorry oil – collecting task that much harder. Use Z and X for left and right and ' and / for up and down.

The budget version has been lovingly hand-whittled from a previous Howkins game called *cakedash*, it's essentially the same apart from the lack of user-defined characters, sound effects and highscore table. If you'd like to see this, try *http://www.arcsite.de/hp/flibble/* and follow the links to download.



Ethanol and isoprene, side-by-side in perfect harmony

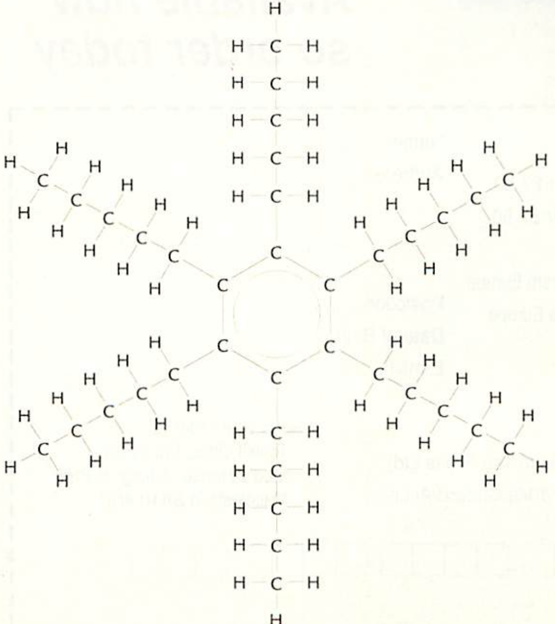
Author: Adam Granger

Ah yes, how different the world of music might have been had McCartney and Wonder been organic chemists (*You're not well, are you? Ed*). However, if hydrocarbons are music to your ears, we have the application for you. **Adam Granger**, following on from the success of *Chemistry* has come up trumps again with *Carbon*. If you've ever wanted to see the tetrachloroethene molecule, this is the one for you – the author describes his creation...

"You type in a systematic name of a carbon compound, and the program draws its displayed formula (click on the *!Carbon* icon on the iconbar to get the input box.) For a demo of compounds select *demo on* from the iconbar menu.

"The program will draw the majority of carbon compounds covered in the first year of A-level chemistry and all carbon compounds in GCSE chemistry."

Organic or carbon compounds include all compounds based on carbon, excluding carbonates, CO and CO_2. Examples include ethanol, butane and octane. Often such compounds have two names – common and systematic. For example, TNT has the systematic name Methyl-2,4,6-TriNitroBenzene, which tells you about the structure.



1,2,3,4,5,6-HexaPentylBenzene
$C(C_5H_{11})C(C_5H_{11})C(C_5H_{11})C(C_5H_{11})C(C_5H_{11})C(C_5H_{11})$

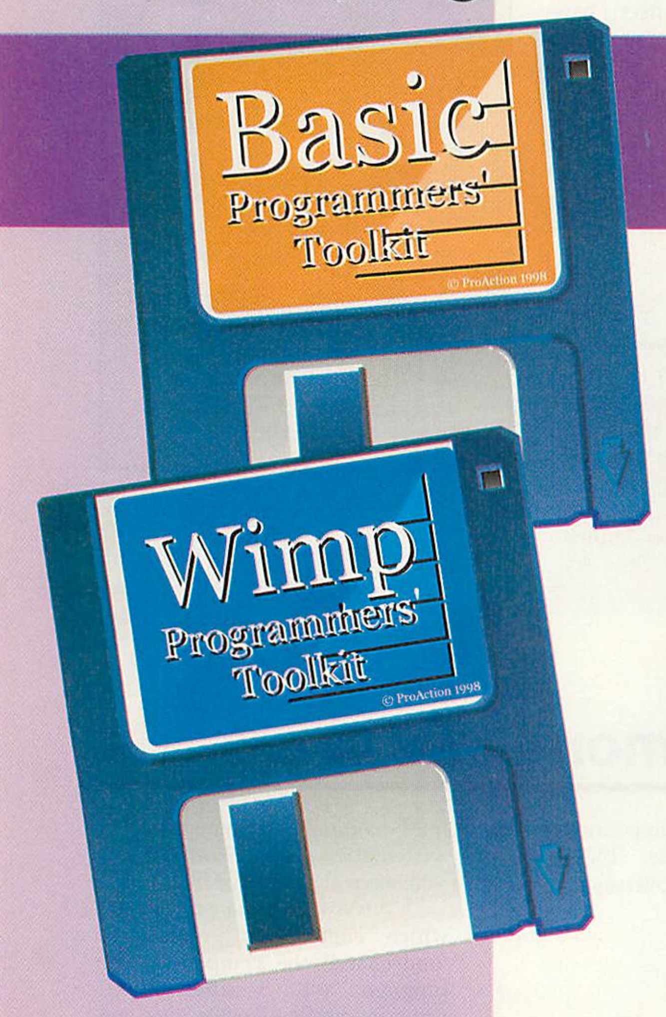
"*!Carbon* uses systematic names which enable the program to 'understand' the compound. The program follows the IUPAC (International Union for Pure and Applied Chemistry) system. *!Carbon* does not demand absolute accuracy however everything needs to be spelt correctly. As shown below *!Carbon* can understand incomplete names very easily:

User input	!Carbon understands as:
TetraChloroEthene	1,1,2,2 TriChloroEth-1-ene
Butadiene	Buta-1,2-Diene

Spaces, hyphens, brackets (and capitals) can be omitted. This is just a demo version of the full program, so you can only view the compounds and not save them.

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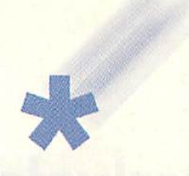
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Isn't that Damon Allbarn?

Author: Thomas Madam

Oh no, it's just a bit of fractal – sorry. Those of you with particularly good memories, or particularly sad and empty lives, may remember a short and almost popular series we ran a good while ago. It was called something like Great Album Cover Simulations of our Time. Well, our next offering begins a new theme which we shall call Great Back-of-Album Picture Simulations of our Time.

Thomas Madams' latest graphical offering produces a foggy landscape that bears an almost frightening resemblance to the picture of Blur on the back of their eponymous album. In fact, if you squint a bit, you can just make out their gangly art-school frames as they wander bemused amongst the mists of the moors. Either that or there's something unpleasant on your monitor. I digress. We had better let Thomas explain what his program is really for I suppose...

"*FogScape* is the start of quite a large project that I have been working on for a while. What it does is generate a fractal landscape (very slowly) with depth shading, fog effects, light sourcing, weathering and all that gubbins. The actual generation of the landscape is done in ARM code, and as a result is pretty quick, unfortunately, I haven't got round to coding a decent polygon routine so sadly, the drawing of the landscape is done in BASIC (ouch!).

"The program works by setting the corners of a square array to random values and then the midpoints of the corners and each of the edges are found. These points are set to the average of their neighbouring points and moved up or down by a random factor determined by *roughness%* at the start of the program. This process is repeated for each of the new squares formed and for each of the squares formed by these squares and again for each of these new squares formed and again, and again, and again....

"The process is done *divisions%* times and this can be set to as high (or as low) as you like (time and memory willing)."

Thank you Thomas – we look forward to the full ARM version and to any other Album-back simulations our creative readership may care to shower us with.



Don't call me Swirley

Author: Graham Stratton

According to **Graham Stratton** this useless program generates a lens which then warps the picture underneath it. All I can say is I don't think this came from a pair of prescription spectacles from Messrs Dolland and Aitchison.

The effect is reminiscent of one of the Windows 'screen savers' (How many screen savers do you know that actually save the screen?) in which the desktop is swirled about in a spirally circularly fashion.

Graham's program needs a sprite file to work with – one is supplied, but to keep disc space to a minimum it is rather sparse. We highly recommend replacing the rather bland image in 'image' with one of your own. The sprite must be 640x480 in 256 colours (a Mode 28 screen). You can always use *ChangeFSI* to tweak the size of an existing picture if you don't have one exactly the right size. The sprite should be called 'swirl' and the file should be called 'image' otherwise you'll be given an error message when you try to run the program.

When you do run the program you'll be prompted for an amount of swirling between 0 and 9. Try about 3 or 4 to get the idea of the effect before overdoing it with 9 or being rather disappointed with 0. Once the image is drawn waggle the mouse about to see the effect.

What is possibly most impressive is that the code is only 892 bytes long. It does need a 5K look-up table, but only 6036 bytes for a complete swirly doohicky is not bad at all.

Unfortunately, Graham has not supplied any source code, so we are unable to divulge how the program works or suggest some modifications.







The early arrivals for the logo ball

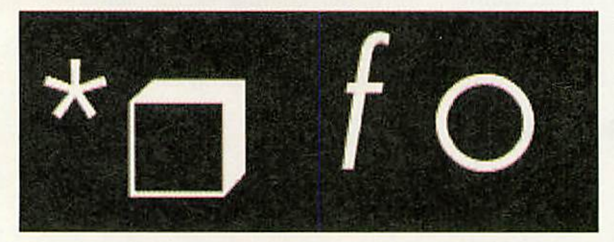
Despite the seemingly endless deadline to our logo competition, I think by the time this issue appears the line will truly have been deaded. Not that will stop the more persistent of entrants – we're still getting nonsense generators! We don't mind of course, in fact, the best entries often appear months after the closing date...



To keep up the interest before the winners are in and announced, we thought we'd slip in one we prepared earlier. *Fonz* would actually not qualify for the competition proper as it doesn't last two seconds, in fact, it goes on for ever! We just couldn't think of an easy way to stop it.

The demo attempts to emulate one of the more arty effects advert and movie credit designers seem fond of these days. It takes the five characters * I N F O and randomly choses a font for each letter, upper and lower case are freely mixed and even the positioning of the letters is jumbled (although the general left-right convention of english text is preserved). The program will freely choose from all the fonts available on the current font path and because of the caching nature of the OS, it does tend to eat large amounts of memory.

This does have the advantage that once the fonts are cached the rendering of the string will become considerably quicker. On my system with 60 or so fonts about 2MB is used after running the program. It is highly advised to allocate about this much space to the font cache before running the program, without it the poor old font manager will tend to rather thrash your disc plotting the letters.



If you are interested, the program is remarkably simple to follow: lines 40-80 set up the screen and font colours. lines 110-150 use the SWI call **Font_ListFonts** to find out the number of fonts available. The main loop of the animation starts at line 170. The next few lines deal with waiting for a screen VSync; clearing the shadow screen memory and preparing to plot the screen.

The loop at 230 picks the letters one at a time from the string, randomly changing some to lower case. A single call to **Font_ListFonts** is used to pick a random font from those available. **Font_FindFont** is issued to prepare the font manager for using this font. A fixed font size of 64 points is used. The call returns a font handle which is then passed to **Font_Paint** to render the character. The x and y coordinates are randomly generated on the previous two lines. Both are multipled by 400 as the **Font_Paint** expects its coordinates in millipoints. Finally **Font_LoseFont** is used to discard the font handle.

If anyone can think of a good way to fade in the logo, and more importantly how to tastefully end it after two seconds we'd be interested to see. Perhaps we could run this as a sub-challenge.



MightyMouse II

Author: Michael Stirling

Cast your minds way back to September 1995. In that month we announced the new A7000 machine and published our first National Lottery program. It was also the month we provided an invaluable utility for left-handed users call *MightyMouse*, which allowed the Select and Adjust mouse buttons to be swapped. Well, the original author, **Michael Stirling** thought it was high time for an update, so here it is.

"I recently bought a Risc PC and as with many machine code programs, *MightyMouse* falls over on the StrongArm. I expect that like me, many other *MightyMouse* users were unhappy about this.

"I have now upgraded the module so that it will work on StrongARM, as well as the earlier processors. I have also taken this opportunity to improve the layout of the original source code and the contents of the !Help file. Version 1.01 is functionally identical to v1.00.

"The bit that caused a problem was the SWI post-processing routine, modelled on the programming example in the PRM page 1-107, which now no longer works. The StrongARM PC is 8 bytes ahead of the current instruction, while earlier processors are 12 bytes ahead. This caused the SWI-calling instruction to be executed repeatedly, crashing the computer. My new version calculates a PC offset which is compatible with both types of processor. If you are interested in how I have achieved this, load the source code *MightySrc* and search for label '.intercept'. The modified code starts from there."

Just in case you haven't got the September 95 issue to hand, the module is very simple to use providing a single command – *buttons. This takes a parameter from 0 to 3:

```
0    buttons normal
1    buttons swapped
2    buttons normal and stored in CMOS
3    buttons swapped and stored in CMOS
```

*QUIT

All programs, applications, hints, tips, this, that and the other to our usual haunt please:

***INFO, Acorn User, Tau Press, Media House, Adlington Park, Macclesfield SK10 4NP**

or, e-mail us (including your real address please) at: starinfo@acornuser.com

No e-mails longer than 100K please. Screenshots, background info and ideas for customising your program are appreciated. Remember that cover-disc space is limited, so while we might enjoy that 1.6Meg adventure game, we won't be able to share it with the readers.

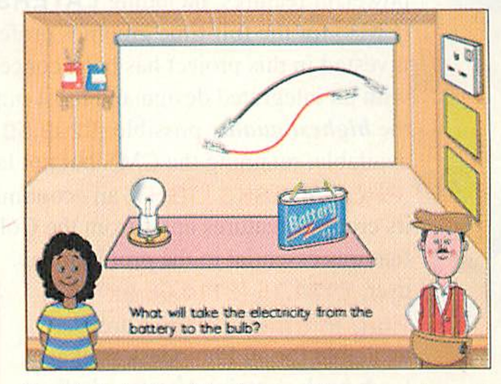
Please put your name, address and program title on every disc and include a text file containing your name, address, disc contents and program details. An SAE will ensure your discs are returned. If you are responding to one of our challenges, please mark your envelope accordingly. *info submissions only please.

All the fun of the fair

Sherston Software (01666 840433) have released yet another title for infants. Following hot on the heels of the *123-CD* and the Oxford Reading Tree *Rhyme and Analogy Activities*, *Science Fair* is the third multimedia CD-ROM for infants that Sherston have published since September.

According to Sherston, *Science Fair* is the result of numerous requests from infant teachers for software to support science work in their classrooms. Set in a funfair, children can choose from five different fairground attractions that deal with physical processes including electricity, forces and motion, light and sound, the Earth, Sun and Moon in space, and day, night and the seasons.

Sherston's Education Director, Bill Bonham remarked: "The *Science Fair* has been one of the most involved projects we have ever undertaken. It has been no easy task to portray, on screen, some of the tricky early science concepts that are outlined in the National Curriculum and Scottish documents, but we are very pleased with the results. It is a credit to Sue Rankin's design (the best selling co-author of *Tizzy's Toybox*) and Paul Hutchinson's illustrations (of Sherston *Naughty Story* fame) that these early science concepts are presented so easily and naturally for young children in a fun activity format."



Key features of the CD-ROM include two levels of difficulty, narrated text, animated help and correction routines and record keeping, as well as a high standard of graphics and presentation. Price £40.00

Table tests

DEVELOPED to support the BBC schools TV series, *Megamaths Tables* from Logotron (01223 425558) aims to help 7 to 11-year olds with their multiplication. Set in a castle there is a themed room for each table containing a different mathematical puzzle and learning game. Help and rewards for speed are built-in with plenty of bright graphics and lively characters. The price is £39.



Diary date



Date: 13-16 January 1999
Venue: Grand Hall, Olympia, London
Web: www.education-net.co.uk
Tel: 0181-240 5051

Tickets are free to this showcase event for British ICT. This year the BETT awards will run differently than in previous years as schools and education professionals will have the opportunity to nominate their favourite suppliers or products. A panel of leading industry figures will decide on a shortlist which will be put to schools, further and higher education organisations who will then vote for the overall winner. If you'd like a voting form contact Caroline Roe at EMAP on 0171-505 8000.

Seminars are an important part of BETT and this year promises to start each day with a Keynote Lecture delivered by leading industry figures such as Alastair Wells, Owen Lynch, Nigel Paine and Anthea Millett. For instance, the first day of the conference begins with the BESA lecture given by Netherhall's Alastair Wells who'll be looking at the ICT needs of pupils and staff. Called *The school's role at the centre of an online community* he will consider the costs of ICT and the benefits to a school of being at the centre of a learning community.

Elsewhere they'll be sessions by Ofsted focusing on some strengths and weaknesses in the teaching of ICT and learning IT capability, while Robin Ritzema will be looking at the significant progress being made in the implementation of the Government's major education ICT programme. The plan being to discuss the developing policy agenda, looking ahead for the UK and out across Europe and beyond.

Tickets for seminars are available at a 50 per cent discount early bird rate until 1 December 1998. The full fee is £20 for the first seminar with each additional seminar being £10. Remaining seats are allocated at the show on a first come first served basis and will be free of charge. Full information on seminars is available from the special seminar fax line on 0336 423440.

Geography freebies

THE Advisory Unit (01707 266714) has launched the Aegis Newsletter offering an Aegis Masterclass, a free Web-based resource designed to help teachers share their ideas and practical experience of using *Aegis 2* software with upper primary and secondary school students.

Log on to www.advisory-unit.org.ukl/aegis/ aegnews1.html for your Masterclass which details the objectives of a particular lesson plan, the topics and classroom activities covered, as well as the Geography, and ICT skills developed using the plan.

Brush up your maths

IF revision software is what you're looking for then AVP (01291 625439) have just the thing. *Revise Mathematics* is designed with GCSEs in mind as well as Further Education courses dealing with basic maths skills, it can both diagnose and correct faults.

Covering arithmetics, algebra, geometry, trigonometry, ration and proportion, transformation geometry, 3D geometry, statistics, sets and probability, graphics and functions among others. There is immediate and extensive help for wrong answers and a correct solution is shown for each question. Priced at £65 for a 5-use school site licence. If you want a home version the cost is £39.95.

Prize winners

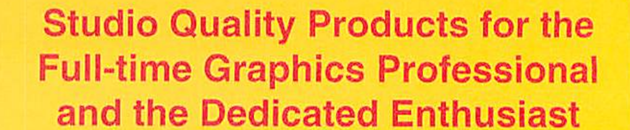
ANGLIA's Internet-based curriculum service, Anglia Interactive has been awarded an EMMA (International Multimedia Award) in the Online Learning and Home Learning category. Commenting on the award, Peter Stibbons said: "Developing a dynamic and interactive educational service on the Internet has been one of the big challenges facing our industry."

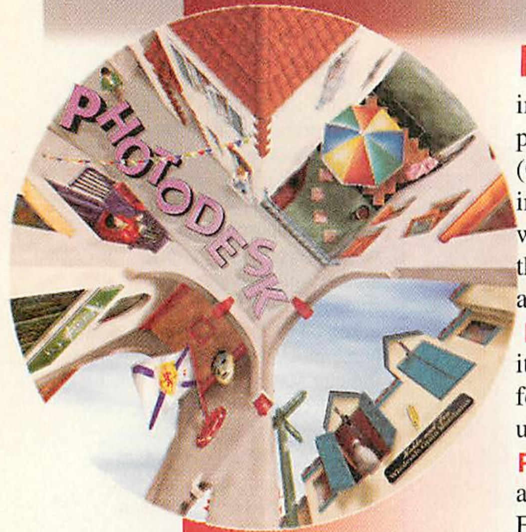
Compose yourself

ESP (0115 9444140) have a new version of *Compose World* for £65. As well as including extended editors and advanced sequencing facilities, it can be used effectively for musical composition and performance as well as offering support for the teaching and learning of music whether your at Key Stage 1 or 3.

Also look our for a new range of support material accessible from their Web site. Certain classroom activities and resources can be downloaded for free, while specific worksheets, flashcards and so on can be bought directly from ESP whether you're a music specialist or non-specialist.

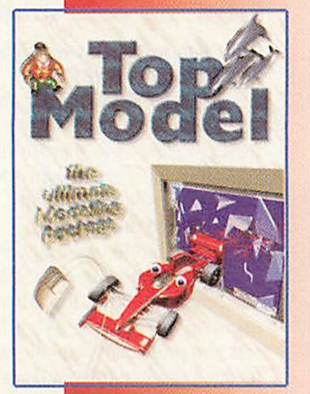
spacetech
imaging technology





PHOTODESK 3 is the LAYERS package which defines studio quality image editing and artwork on RISC OS machines. It is easy to use but has many powerful features, including **LAYERS** and a sophisticated colour management system (CMS) for the full-time graphics professional. Most of the extensive programming effort invested in this project has been concentrated upon ensuring a predictable user interface with an integrated design and most importantly, all operations have been engineered to the ***highest quality*** possible. **£299.50 (£254.89 ex VAT)** **PHOTODESK2** is still available, retaining the CMS but not layers, **now only £199.00 (£169.36 ex VAT)** **PHOTODESK3 LIGHT,** an economic alternative to PHOTODESK3 retains most of its creative features apart from the Colour Management System, Layers and some features essential to the professional user. **£134.75 (£114.68 ex VAT)** **Plug-in Effects Packs** are available for all Photodesk packages. Each pack contains 10 special effects: **£19.95 (£16.98 ex VAT)**

PHOTODESK3 NOW SHIPPING!
Purchasers of Photodesk 3 or Photodesk Light will receive a complimentary CD-ROM of useful resources, utilities and Tutorials. This CD is available to existing users for **£24.95.**



TopModel 2 the 3D editing package from Sincronia of Italy has been rewritten to include many new features including an easy to use interface and the fantastic **GEMINI** graphics engine.This package is particularly suited to artists and designers, because for the first time it is possible to model objects in a single 3D view. New features include texture, chrome and bump mapping, lens flare, up to 1024 light sources, fog & haze and many many more! **£152.75**

New Version of TM2 including NEW CD-ROM and NEW plugins: TopMotion, the long awaited animation suite, and Top3DFonts!

PhotoLink is an Acorn multi-driver for the most popular makes of digital camera. Cameras currently supported include the **new Olympus** range including the fantastic **C840L.** and the **C1400L SLR Zoom**"**...if you buy a digital camera at all it should be an Olympus; personally I would also opt for the Spacetech driver**" *Richard Hallas, Risc User.* "**...the results from the Olympus/Spacetech combination are stunning . . .Spacetech's offering is by far the most comprehensive...**"*Stuart Tyrrell, Acorn User*. Superb hard copy can be obtained via our **FotoFun** printer or Canon **PhotoReal** PhotoLink is available on its own at £69.00 or bundled FREE with a camera.

NEW!
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PhotoReal is the Acorn driver extension for the **Canon BJC4300, Canon BJC4650, Epson Photo, Photo700 and EX** printers with photo-realistic capability. PhotoReal makes use of the same advanced techniques for producing high-quality four colour separations as Photodesk and comes ready calibrated for the special dye-based inks used for photo-realistic printing. A calibration application is also supplied to allow you to tailor the results to your own specification **Driver only £69.00 Inc.VAT. or FREE if purchased with printer! example: Stylus Photo700 + Driver £272.60 inc.VAT**





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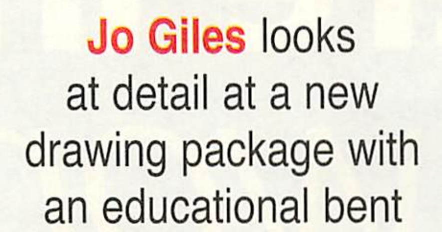
Dazzling graphics

Jo Giles looks at detail at a new drawing package with an educational bent

I MUST admit to assuming that *Dazzle* was a simple to use art package for kids. Better than *Paint* but not really worthy of serious contemplation. The new version, *Dazzle Plus*, dropped on my desk and I was more than a little surprised.

What you get is indeed a simple art package, but by altering the settings you can make this one package cater for the keyboard and artistic capabilities of a very wide age range indeed. For instance, younger children can use the program with large tools – also useful for children and adults with limited movement or who are visually impaired. At the same time the number and variety of tools can be adjusted to the needs of the child.

You choose your configuration options from the iconbar menu and you can have a number of settings saved under different names. Adjustable features come under four headings: tools, windows, menus and palette.



With the tools you can set the width of the toolbar, attach it to the side of the canvas or let it float free as well as set the size – Tiny Tools. Removing tools is a matter of holding down Shift and dragging the tool you don't want off the toolbar. You can enlarge or reduce the size of the tools in a similar way. To add tools simply drag them from the tool palette. Similarly you can remove/add items to the *Dazzle Plus* menus.

Colour palette choices give you the option of having a colour wheel, standard desktop palette, long/medium/mini 256 colour palette, simple or toolbar options. The colour wheel works best for those using 16 million colours while the simple palette contains 10 colours but these can be lightened or darkened by using the arrows and you can mix colours.

A configuration setting saves options such as brush size, number of sides on a polygon, thickness of spray, and filled/outline shapes. If *Save Stamps* is clicked in the palette choices any stamps in the Stamps Window will also be saved with the configuration file and automatically loaded. This is useful for setting up *Dazzle Plus* for specific uses and users.

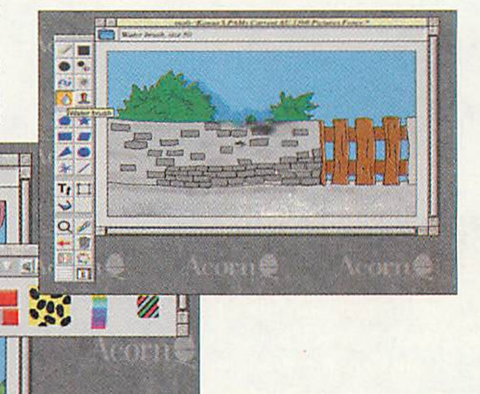
Colourful options

For new pictures *Dazzle Plus* uses a default screen size – Normal which is 640 x 480 pixels – but you can change this to work in A4, A5, portrait or landscape depending on your needs as well as 15, 256, 32 thousand or 16 million colours.

The main program screen is split into three areas: canvas, toolbar and palette, but how they look will depend on how you've set up the program in the first place.

Colours can be mixed be choosing an initial colour and clicking on a second with the menu button. The new colour appearing in the colour display box with the process repeatable again and again until you create that perfect colour. All palettes have a colour selection area some contain a slider bar which lets you set the transparency level between 0 and 97 per cent. This then applies to all colours and effects including stamps.

The tools themselves are pretty much as you'd expect: pencil, square brush, round brush, diffuser brush, tin, spray, water brush, stamp, clone, shapes (polygon, star, rectangle, parallelogram, triangle, circle), radial lines, straight line, text, fill and so on. Some tools are more unusual, such as the rainbow and symmetry tools. If you're not sure what something is leave your mouse over it and wait for the description to pop-up.



Several of the tools have menus associated to adjust how they work. For instance, select the round brush and you see that the brush size can be changed in three ways, input a new value, use the arrow keys to cycle up or down or simply drag the brush mark to the size you want.

The effects are quite amazing particularly when it comes to making fuzzy pictures with the diffuser or applying water to a drawing using the water brush. Some of the younger children I tried the package with really enjoyed using the more unusual tools.

The rainbow tool lets you create a brush that changes between a range of colours as you paint. You can create your own colour range and produce some rather striking or subtle effects.

You can select any size of area you want and cut, copy, move, scale or process it in a number of other ways such as flipping, tiling or tinting. You can make your initial selection as a box or opt for an irregular shape which works best if you want to cut an object from the canvas. You could then use this as a stamp without ever accessing the stamp window.

Finishing touches

Saving is as you'd expect but I was surprised to see that you can save as Sprite or JPEG as standard. You can also load/import images. The manual is good as far as it goes but I would have liked to see a Guided Tour or sample projects for those new to this type of package.

Though this works really well in the classroom, letting teachers set the program up for different children and lessons, it is an easy to use program which will grow with a child at home too.

Product details

Product:	Dazzle Plus
Supplier:	Granada Learning Ltd, Granada TV, Quay Street, Manchester M60 9EA
Tel:	0161-827 2927
Ages:	5+
Price:	£75 single user, £150 site licence (exc. VAT, £3.50 p&p)
E-mail:	sales@granada-learning.com
Web:	www.granada-learning.com

Where in the world...

A selection of the best geography packages around

Aegis 2
Lets you display, combine and select geographical information. Databases, spreadsheets and graphs can be integrated with maps. Provides a powerful tool for interpreting and presenting geographical data. Topics covered: world development, regional disparities in Europe, world wildernesses, unemployment in UK regions, acid rain and ozone in UK, field work, history of US colonies and colonial Williamsburg. Ages 7-14+
£100
Advisory Unit (01707 266714)

Around the World in 80 Days
Contains activities introducing children to a wide range of geographical skills such as grid references, longitude and time zones, latitude, contours, bearings and European and world geography as they journey around the world and plot their progress on the maps. Ages 9-12
£44.95
Sherston Software (01666 840433)

Earth and Atmosphere
PictureBase CD addressing the physical aspects of the Earth and its atmosphere. Provides information on the patterns, relationships and processes associated with rocks, rock structures, weathering, erosion, weather and climate. Topics include: Rivers, Coastlines, Past Glaciation, Limestone and Chalk, Igneous and Metamorphic Rocks, Sandstone and Clay Rocks, Rock Weathering, Slopes and Mass Movement, Earth's Internal Processes, Plants and Their Environments, and Weather Conditions. These photo resources can be used wherever needed. Ages 7-16
£69
AVP (01291 625439)

Essential Geography
Six games: *Frogger* covering land use, transport, terms of physical and climatic features, measuring equipment and scales. *Treasure Hunt* dealing with compass points and co-ordinates. *Cliffhanger* looks at weather, transport, farms, physical geography, while *Chart* takes maps, features, countries, cities, seas, mountains, deserts and rivers. *Match and Grab* introduces plans of buildings and features, symbols, contour maps and *Jigsaw* examines climate, seasons, planets, time, volcanoes, power sources, environmental. Ages 5-12
£12.75
AVP (01291 625439)

Exploring Maps
Introduces the concept of maps and mapping through three sections: *What is a map?* introduces maps, mapping, the use of the symbols and features. *Working with Maps* presents maps of the world, Europe, the Americas and Britain. Each map has three case studies, presenting information using pictures, text, audio and video. An interactive key enables pupils to build up information on maps to make them as simple or complicated as required. Activities to be completed off-screen are included. Case studies are accessed via an index or by clicking on hot keys on individual maps. Finally, *Map Skills* comes with questions and activities aimed at developing an understanding of basic map skills. Ages 7-11
£59.99
Granada Learning (0161-827 2927)

Globe Maker
The National Curriculum requires children should be aware that world can be represented as a flat surface. Choose from 20 different elements – oceans, mountains, political and so on – print a pattern which can be cut out to make a 6in globe. Ages 7-14
£45
Soft Teach (01985 840329)

Landmarks Series
Software programs developed from the topics in the landmarks BBC TV series and covering, history society and geography. Each program has a computer child guide to answer questions and help with the exploration: Columbus, the Aztecs, Civil War, Victorians, Elizabeth 1, Second World War, Project Egypt, Rain Forest. Ages 7-14
£27
Logotron (01223 425558)

Langdale Primary
A study of the Langdale Valley in the Lake District using OS maps, diagrams and ground photographs, statistics, charts and sounds. You can tread the paths and see the views as well as going behind the scenes to use the resources provided. Ages 9-11
£99
Creative Curriculum Software (01422 340524)

Local Studies
Learn map symbols, grid references and draw own local maps. Uses OS maps and you can attach information and pictures to any part of the map, display traffic surveys, house and shop surveys too. Useful for farm surveys or nature trails. Ages 7-14
£45
SoftTeach (01985 840329)

Map Detectives
Full of mystery and fun, this requires children to make decisions which will affect the course of their adventure. The contents include: grid references, distance and scale, map symbols, compass skills and route planning. The program incorporates photographs, animations and sound all inter-linked into an ingenious story that changes every time you take up the challenge. The pack also includes a wealth of support materials, including: OS style maps, road maps, street plans and underground map. Ages 8-13
£44.95
Sherston Software (01666 840433)

Map Skills
Complete packs useful for a wide age group. Topics include grid references and following a route on an OS map. As well as the disk the package includes two OS maps (Plymouth and Telford), worksheets and teacher's notes. Ages 7-14
£49.95
Pebbleshore Information (01483 503121)

Maps and Landscapes (Vol 1 & 2)

Demonstrations, games and test/practice programs on contour lines, landscape cross-sections, scales and directions. You can demonstrate the same area-map in four or more different scales. Copy sheets and booklet are included. Ages: 9-14

£25

AVP (01291 625439)

Navigator

Navigate from point to point using commands which can be logo-like with distance, angle, bearings, vectors, grid references, latitudes, longitudes and so on. *Fly the Atlantic* and *Fly the Space Shuttle* activity packs available separately. Ages 7-14

£45

Topologika (01326 377771)

Our World Complete Pack

All the named features can be investigated by the child, with colour photographs, maps, information, rainfall and temperature records, at each location around the world. Included in each on-screen journey around the chosen part of the world are a series of questions which check that information has been understood. Ages 7-16

£65

Chalksoft (01775 769518)

Oxford Talking Infant Atlas

Based on the print version of the *Oxford Infant Atlas*, here children can explore the atlas at their own pace, click on any labels of sentences they can't read and try any of the numerous activities. Buttons turn labels for countries, place names and geographical features on and off, while quiz buttons ask children to identify particular features. Includes the place names that children need to know at Key Stage 1 and introduces and develops understanding and conventions of maps; introduces geographical terms; identifies major geographical features. Includes a copy of the paperback atlas. Ages 5-7

£20

Sherston Software (01666 840433)

Round the World Yacht Race

Simulates British Steel Challenge Round the World Yatch Race. Circumnavigate the world against winds and currents. Covers the realities such as what food to take and how to calculate routes from Southampton via Rio de Janeiro, Hobart and Cape Town. Icebergs, whales and equipment failure will aim to make your job more difficult. Ages 9+

£29.95

Storm Software (01935 817699)

Smudge Discovers the World

Equips children with basic geographical skills. Easy-to-use, presents colourful scenes in three sections. Smudge looks at different types of housing in villages, towns and cities and discovers the United Kingdom and Europe – looking at the political, physical and human features. Smudge also encourages research to build up a detailed profile of the area in *Postcard to Home*. Compass, co-ordinates and mapping skills are introduced and reinforced (levels to suit a range of ages/abilities) in part two. With Smudge's guidance, children will develop skills to use, read and design maps. Rivers and the effects of the weather on a community come to life in part three. Ages 5-9

£45.99

Storm Software (01935 817699)

Topographer

Have lots of fun while learning about maps, contour lines, valley and rivers – in fact all the features of an OS map. Has a 3D section to convert a 2D map into a 3D landscape. Ages 7-16

£79.95

Clares (01606 48511)

WeatherMapper

Information about climate, weather systems, charts and folklore. Children can add their own ideas to the database and print weather maps and charts from the data they have collected. Sound and animation enhance the program.

Ages 7-14

£39.95

Tag Developments (01474 357350)

Village Life in India

Divided into nine sections, some focus on the Nilgiri hills in southern India, while others place this locality in its wider Indian context. All sections allow direct comparison with different localities, including the pupils' home area. Video clips, still images, maps, statistics, diagrams and exercises, most of which are accompanied by a soundtrack of authentic Indian music. Ages 7-11

£55

Actionaid (01460 62972)

Weather Station

Record daily weather readings and then display them on screen and in print. The teacher can change the display from metric to imperial units at any time and readings are accepted for rainfall, maximum and minimum temperature, wind speed, wind direction and barometric pressure. There's an outline map to create with weather icons too.

Ages 9-13

£38.50

AVP (01291 625439)

Weather Watch

Database with information on (min/max) temperatures, rainfall, cloud cover, wind speed, wind direction and air pressure can be entered with the greatest of ease and printed out as a bar chart, barline chart, scatter graph or line chart. Pupils can print out wind roses, climate graphs and minimum/maximum graphs. Ages 7-14

£45

AVP (01291 625439)

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Shout it loud

A new LED display project by **Mike Cook**

Last month I promised we would look at an application using a PIC chip, well here it is, a large-digit scrolling display. This can be made any width you like, but the basic unit can display four characters on a 20 by 7 dot matrix and you can cascade up to 16 such units giving the capacity of showing up to 64 characters.

The basic building block of the display is a 35 LED matrix arranged in a 5 by 7 square. Now you don't get access to all the LEDs simultaneously but they are available on a multiplexed basis. They are wired up as shown in Figure I, if you apply a positive voltage to one row you light up any individual LED in that row by earthing the appropriate column connection.

That means that you can only control up to five lights at once but the trick here is time-division multiplexing. What we do is to light one row briefly and then move onto the next, and the next. If we do this fast enough the eye is fooled into thinking they are all on all the time.

The advantage of using a PIC chip is that we can give it the boring, repetitive task of repeatedly switching the LEDs. This could be done by the main computer but is a waste of resources. Furthermore, in a multitasking environment one task might hog the processor time or even crash leaving the multiplexing frozen. Then not only would the display effectively disappear but we could be left with too much continuous current going through an LED which might burn it out. So rather the cheap PIC gets to do the repetitive job, leaving the computer to issue commands whenever it needs to change what is being displayed.

The circuit shown last month is the basis for the module, the only change is that pin 18 is connected to pin 6. This allows the arrival of serial data from the computer to trigger an interrupt, so the PIC does not have to keep looking at the serial line all the time. To this we must add the circuit in Figure II to drive the LED matrix modules.

Power supplies

Each row needs to be connected to the positive supply in turn, and this is done by using a P-channel power FET. As this has to carry the current for potentially twenty LEDs it needs to have a high peak current rating. You could use a power transistor here but really a power FET is the best answer, as this is the component that you are most likely to have difficulty in finding (it's not in the Maplin catalogue) see the cover disc for details of how to get hold of them.

These FETs are turned on by a logic low but we can't connect each one to a PIC output because we haven't got enough to go round. As we only need one FET active at a time we can use a 74LS155 demultiplexer. This takes a three bit binary input and puts the output, that corresponds to the binary number on the inputs, to a logic zero. It is wired up so that when the number zero is put on the inputs no FET is turned on, and with inputs of 1 to 7 one of the row's FETs are turned on.

I could have used a transistor or buffer amplifier to do this but the maximum peak current could be up to 2A so it would have to be quite beefy. The power FET offers a cheap solution, however they are not the common n-type but p-type. This is because the FET is sourcing the load with power as opposed to the more common sinking, or connecting to ground. Also, as the FET is being driven from logic, for optimum efficiency it needs to be designed to switch from five volts.

Now at the other end of the LED we need to ground each column matching the LED we want to turn on or sink the load. This circuit need only take the current from one LED and so it does not need so strong a driver. I have used the common Dartington driver the UNL2003, you get seven in a package. This requires a separate output from the PIC for each of the columns, 20 in all.

Unlike the row drivers these can be on or off in any combination so we need to generate 20 outputs from the PIC. This needs some sort of output expander circuit, the way I did it was to use a shift register to clock out the required bit pattern before we activate the row. The PIC can clock bits out so fast that the time taken is negligible compared with how long the LED is on.

Figure I: The LED Matrix

Each LED column has a series resistor to limit the current and this is shown on the diagram as R. The value of R will determine the current through the LED and hence the display brightness. Unfortunately, it's not that simple, the maximum LED current is 30mA which when you multiplex it (flash it) is not too bright. However, you can put more current into it if you pulse it, which is what we are doing, the rating for the display is 150mA pulsed for a 10% duty cycle – it is on 10% of the time.

We are having it on for slightly longer than that, it is on one time interval in seven so that works out at 14%. To find out how much current we can put through it you need to draw a graph. Plot two points one with 100% and 30mA and the other at 10% and 150mA. Then join them up with a straight line and read off the current our 14% duty cycle will require. Then just reduce it a bit to be on the safe side, I settled on 120mA which, with a 5 volt supply, requires a resistor of 24 ohms.

This is fine if the display is always being flashed but what if some development software error stopped it – too much current would go through the LED and it would burn out. Therefore, just for the development phase the resistor R consisted of two resistors in series, a 24 ohm in series with a 100 ohm. When development was completed I shorted out the higher value resistor and the display brightened up. If you are just making my circuit and not doing any of your own tinkering you can use the lower value resistor only.

A note on the construction of the display, as the row circuit could be drawing a lot of current, make the wires to that a little more substantial. I used tinned copper wire of 22 SWG for the LED matrix bussing although you could use thinner wire. I also arranged the LED current to come from a separate regulated supply to prevent any ripple I might get on the voltage rails. I have fitted my computer with a socket on the back that



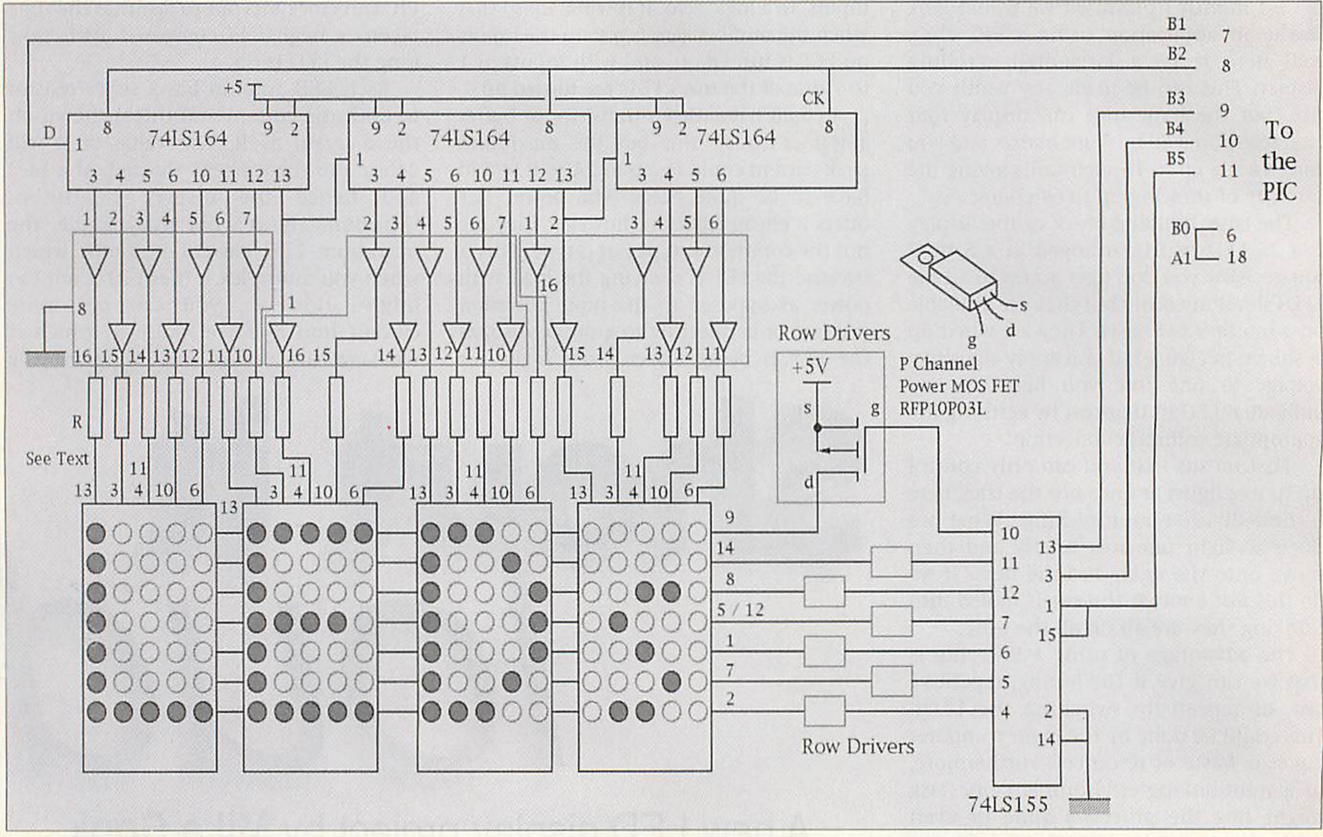


Figure II: The LED Matrix Display



takes 5 volts from an unused podule socket. While this is fine for most projects but this one draws up to 2A peak so this arrangement is not recommended, you need a separate supply.

Commanding the PIC

The PIC controller talks to the computer through the serial interface as we saw last month however, this display is designed so that several units could be linked. You need to connect the transmitted data to all the controllers but only need one controller to supply the CTS signal.

The idea is that the computer provides commands to the PIC which is responsible for multiplexing the display and inputting the new data into a display memory. This memory takes the form of 21 byte memory locations, each 20 bit line on the display is stored in three bytes, that leaves 4 bits in each line unused. Commands to the display consist of two bytes, the first containing the command type and the PIC display controller it is addressed to and the second containing the data.

The form of this data changes depending upon what the command is. Just to make sure that the display knows which byte is which the command byte always has the most significant bit clear while the data byte always has it set. Within this format there are 7 bits free to specify both the command and the identification of the display. When several displays are placed together you don't want each one responding to every command so you must uniquely identify each display and embed that identifier in the command.

Also the code in each PIC must know what display it must respond to. This could be done by setting hardware switches that the code reads on power-up, however there are not enough free inputs. You could add another shift register to clock them in but that's adding extra expense. The simplest solution is to have the ID hardwired into the PIC code and this is defined by a constant in the source code, called, surprisingly enough, ID.

I decided to allocate 4 bits for the ID and 3 bits for the command type. This gives the capacity of 8 different commands and 16 displays. On cost grounds alone this is more than enough displays. We will look into the commands in detail next month but for the time being the structure can be seen in Figure III.

I really need another article to talk about the software both in the PIC and the computer, however on the cover disc is a general purpose application that will communicate with my serial PIC projects, it's called *!ComPIC*. This is quite simple to use, just enter the hex numbers in the send icon and then click the send button. Repeated clicks of the send button send that data again.

If you want to clear this data press Return to both send it and wipe the icon clean. Any data that arrives from the PIC will appear on the lines below, again in hex – there are none in this application. Also on the disc is code for the PIC to test the hardware. This puts a pattern on the display when first switched on and then for every byte received down the serial line scrolls the pattern along and puts a binary count on the columns.

In this way you can check for any hardware faults. When I made the prototype I had two errors that meant the LEDs weren't lighting up correctly. This proved to be short circuits between some column and row connectors on the back of the matrix. You could tell what was wrong because the pattern did not scroll cleanly – the pattern changed when it passed over certain columns.

Well that's about it for this month, next month we will look at the working code for the PIC and see what software we need so that the computer can control a scrolling display, see you then and have a Merry Christmas. AU

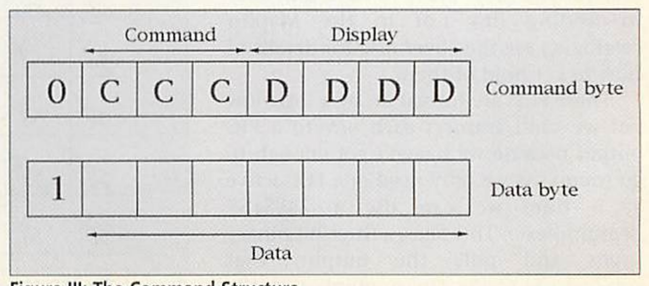
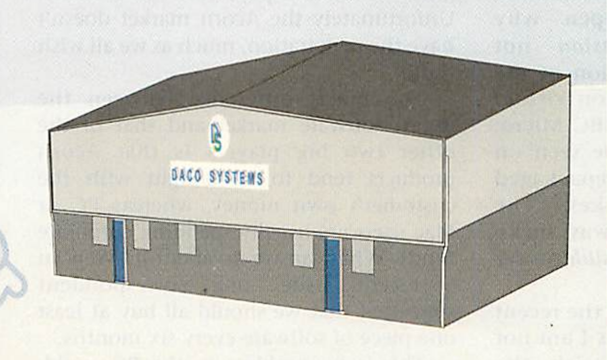
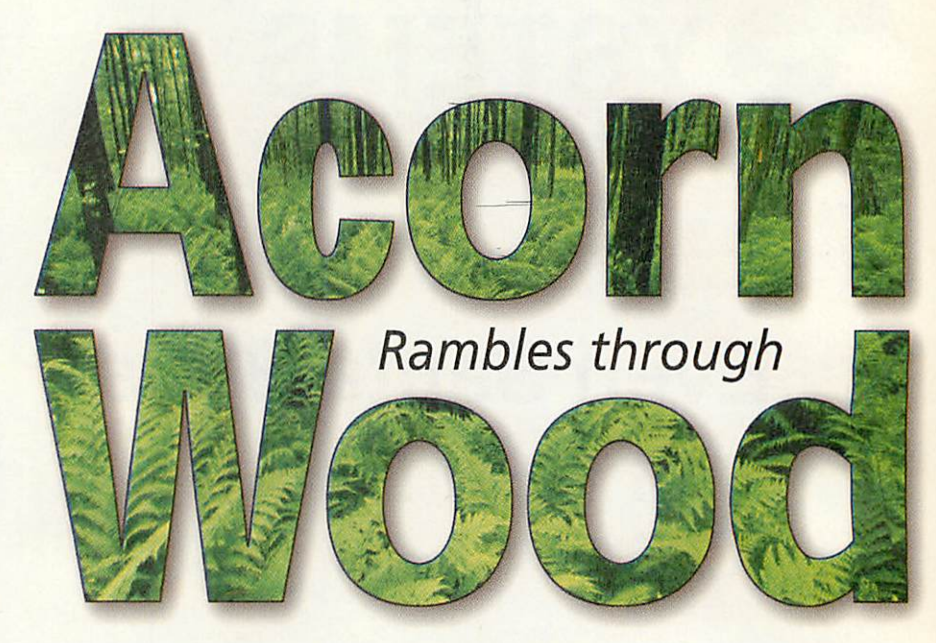


Figure III: The Command Structure


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Acorn Rambles through Wood

The tour continues ably conducted as ever by **Mike Cook**

Well there's a lot happened since I last rambled, of which the news from Acorn is the least of it for me. The Dean of the Manchester Metropolitan University has closed down all Physics courses so I'm out. In the particularly inept fashion that might be called "Doing a Boland" the students and staff got a very raw deal indeed. If you are thinking of going to Manchester Met., especially the computing department, I personally would advise against it, as students are paying more and getting less than ever before. Anyway, I am well out of it and doing a real job at the satellite decoder company Pace.

With regards to the situation at Acorn I can only echo the words of Douglas Adams in the *Hitchhiker's Guide to the Galaxy*: DON'T PANIC. The existing Acorn machines can still more than hold their own in this PC-dominated world and they will still be competitive when today's top-of-the-range Pentium machines are gathering dust. The reason is simple: As PCs get more powerful, Microsoft's operating system increasingly swallows the power, whereas Acorn delivers that power to the user. It will still remain the easiest platform to program and will serve virtually all your computer needs for years to come. So don't be in a rush to jump ship.

A letter from Chris Web provides inspiration for more of my pontificating this month. While posing a question about hardware, he makes this plea:

"Why, oh, why does the Acorn market seem so slow to respond to opportunities? We have all enjoyed (?!) the World Cup in June and endured the endless marketing from Sony regarding the official game for the event. Other platforms have also released their unofficial versions of the same game which have, according to my local software vendor, sold extremely well.

"It is not just the World Cup I am talking about – there are other sporting events that could spark a bit of interest in games software, perhaps Wimbledon – tennis is a popular sport and a good simulation would stand a chance. More recently we had the British Open – why have *The Fourth Dimension* not marketed an unofficial version of the event for the superb simulation *Virtual Golf*? We had *Revs* on the BBC Micro: sheer quality. Nowhere to be seen on the RPC, but if ported and repackaged would sell like hot cakes. The Commodore Amiga (RIP) was lucky enough to have *World of Sensible Soccer* released for it.

"I spoke to a few people at the recent South East show and it seems I am not the only person fed up with the 'unenthusiastic attitude' in the Acorn games market (excluding notable exceptions, R-comp to name but one). I think that if companies could respond to the marketplace and seize opportunities then a bit of life could be breathed back into the games community."

This is not an untypical letter expressing frustration at the lack of something happening in the Acorn market. "If only this then it would be better" is the cry. Now, personally I don't think that the Acorn market is lacking in talent or initiative but simply volume sales. This sort of thing doesn't happen because it does not make enough money to be worthwhile. Occasionally someone will launch a mega-game or something very flashy, but it takes a lot of sales to recoup the outlay in packaging and advertisements – let alone the time it takes to produce. Gone are the days of the lone programmer producing a killing game.

Most commercial games titles are produced by teams nowadays – just look at the credits – and it takes worldwide sales to pay that back. Of course once a game takes off it pays back handsomely. Unfortunately the Acorn market doesn't have the penetration, much as we all wish it did.

The major difference between the Acorn software market and that of the other two big players is that Acorn products tend to be bought with the customer's own money, whereas PC or Mac users are usually spending corporate funds. What can we do about it? Well, in a recent issue, one correspondent suggested that we should all buy at least one piece of software every six months.

This is no problem in the PC world: due to badly-written programs and the introduction of new but incompatible operating systems, you have to buy the same software over and over again just to keep on working with it. In the Acorn world however, things tend to last forever. Remember that old film, *The Man in the White Suit,* starring Alec Guiness? He invented a cloth that never wore out or got dirty. Things went great until the market was saturated, then it all went into recession. The Acorn market needs a kick-start, or it'll go the same way: don't wait until someone repackages a product, buy it now!

Next, Andre Elliott has some input for a past problem:

"For Richard Davis who wanted to network some Acorns. I'm not sure if the A3010 or the A4000 has a simple way of adding Econet, and you'll need other bits and pieces like a filestore, but they're fairly cheap now. I just got a very ill E01S for free, and it is possible to use TCP/IP over Econet. The details on setting up a Econet Network are in Frobnicate, Issue 9; and the stuff about using TCP/IP over it is on Richard Murray's web-site. That's at: www.argonet.co.uk/users/rmurray/. This should be much cheaper than Ethernet – although it's a lot slower."

It's always great to get some feedback as to what you are doing with your Acorn computer. This month we have reports on

two successful projects. First up is John Penton from Trinity College, who writes:

"My aim was to have a system which would switch on my hi-fi in the morning to wake me up (much better than an alarm 'cos it keeps playing), and to be able to have it switch off at night if I forgot. it should be controllable from my bedside.

"Originally I had a electro-mechanical system based on an old boiler timer and thermostat. This required me to use the radio – as it could not start the CD player. I have now built a system running off the I²C bus on my Risc PC using a PCF8574. Four of the I/O lines on the 8574 are used as outputs. These are expanded to 10 with a BCD decoder (4028). Two of these lines switch T-type flip-flops (4013) which drive a Maplin zero-crossing opto-isolated mains switch (great little kit), which in turn controls the power to the hi-fi.

"Four of the I/O lines on the 8574 are used as inputs, connected to the output of SR latches (4044), to provide handshaking. Simple push-buttons are connected to the set and the resets are all connected to one of the outputs from the 4028. In order to control the CD player, I connected a set of opto-transistors across the contacts of the switches on the front panel. These are encapsulated with suitable LEDs which I drive from the remaining outputs of the 4028.

"At the moment a simple but large BASIC program provides command line interfacing from a TaskWindow controlling the mains and the CD player's *play*, *shuffle* and *repeat* buttons. A system of alarms has also been set up which allows a command to be executed at a given time and day. I have taken care that the system is not interrupted by power failure – upon power-up it will return to the last state and execute any alarms missed."

That sounds a great system – but doesn't the fan in the computer keep you awake? Or does its white noise lull you to sleep?

Ken Wright from Claremont, West Australia, has been using my *PortMonitor* application to test a piece of software of his own, which controls lights and motors through the printer port. He has been letting local schoolchildren loose on the system to run various models. His applications are on the cover disc in the 'extras' folder.

George Murphy has had a frustrating time Web surfing lately:

"I have noticed while browsing the Web that there seem to be a number of Websites, in particular the BBC Proms site, that have a 'Real audio' link allowing you to play music live. Not surprisingly, my ageing but faithful A3010 reports a 'no run action' message when I try to follow the link, presumably as it is trying to run a windoze program.

"Do you know of any conversion utilities or packages which can run these files either on or off line, preferably freeware? I would be most grateful if you could point me in the right direction, as my attempts to search through HENSA and Altavista have so far drawn a blank. Many thanks."

RealAudio is a proprietary system for both playing live sounds and sending sampled sounds. It works on a streaming system: that is, it does not have to load in all the file before it can start to play it. This is, of course, what you need for real-time sound. In practice however, if the data stream is not fast enough the sound is intermittent, like the result of a dodgy connector in the speaker lead. There is a RealAudio player for Acorn's Network Computers but the licence does not extend to RISC OS at present.

Jason Strong would like to back up his lone support for Acorn machines with a solution to a pressing problem.

"A golden opportunity has arisen at my place of work. One of my work colleagues has been tasked in procuring a computer solution for a specific application. The application involves the calculation and plotting of 2D and 3D graphs derived from mathematical formulae. This is primarily for the calculation of microwave freznel zones. I can see this possibly being accomplished in two packages, one an equation editor, the second a graph plotting package.

"Being reasonably open-minded but bored with my constant praise of Acorn machines, he has approached me to see if an Acorn package is available. Do you know of any suitable software? On a separate subject is there any RISC software available that allows an Acorn to be connected to a PC using the DOS software interlink or interserver?"

On other platforms the solution would be to use MathCad or Mathematica but I think there may be a cheaper Acorn solution: *RLaB* is one possibility, available from HENSA. There's also a maths package called *Reduce*: it has a basic text interface, but it comes with a copy of *!Gnuplot* to which it can link to for plotting 2D or 3D graphics. Unfortunately I seem to have mislaid the information on where to obtain it.

Malcolm Brooke over in Germany is having a problem with an upgrade. He writes:

"We are plagued with a problem with our Risc PC 710. The machine worked perfectly when fitted with the original 1Mb of VRAM but following an upgrade to 2Mb there were a constant stream of data abort errors, the machine would hang up and, rather bizarrely, the background colour of various windows would be bright green. There would be times when the machine could be used extensively with certain software but as soon as it was used to print a document it would lock up.

"After removing the 2 Mb upgrade and running without VRAM everything returned to normal. This would seem to indicate a faulty VRAM module. However, IFEL, who have been very helpful, have already sent us three modules. To have one faulty module could be considered a misfortune, to have two is rather unlikely, but three..."

Well, it does seem that with three replacements the problem doesn't lie with the VRAM. However, when the VRAM is removed your problems vanish: this seems to point to a motherboard fault. If there was an unsoldered joint or faulty connection in the most significant bit of the address bus, that would explain why it works with the smaller memory. The fact that the VRAM memory can be used as main program memory when not being used for display would explain why certain programs ran while others crashed. It's really not a DIY fix; it needs to be taken to a service centre.

Dr. C. Lake from Billericay is having printer problems. He writes:

"I have purchased Epson Stylus Photo 700 to use with my StrongARM RISC PC. It came complete with a PC driver but, of course, there is no suitable Acorn driver. I am using a Stylus-Colour driver which unfortunately prints a letter F at the top left corner of every page. Is there any way I can use the PC driver to print my files from Ovation Pro and PipeDream?"

As far as I know you can't convert from Ovation Pro or PipeDream to a PC application. I did hear that Spacetech are supporting the Epson Photo printers so you might like to check them out.

Finally, Mr. Sparrow has e-mailed me with more information on PIC programmers:

"The PIC programmer that I use (via the PC card) on my RPC is available from http://let.cambs.net/picprog.html and the software I spoke of is available from my Webpage at http://www.york.ac.uk/~rps102/pics/picchips.htm" AU

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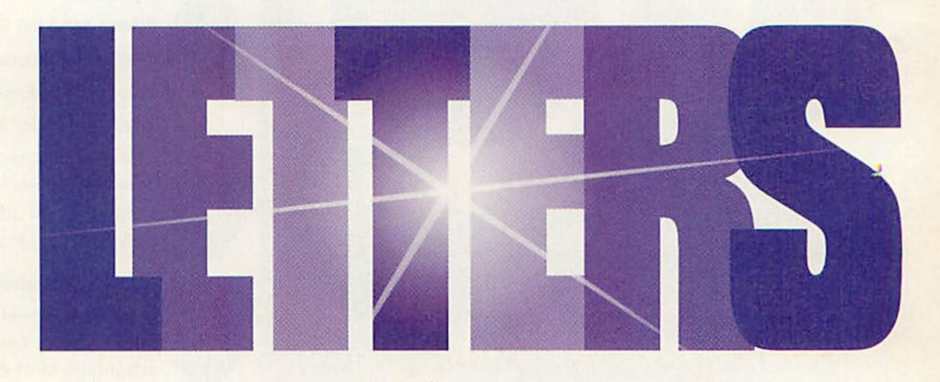
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PGP not by Nat

I was pleased to see Alisdair McDiarmid's article on the use of PGP for secure e-mail (November '98). Many people are blissfully unaware of how easy it is to intercept and even alter ordinary e-mail.

The article states that the RISC OS port of PGP is 'maintained' by me. To avoid possible misunderstanding, I would like to make it clear that I am not responsible for that port. It was created by Gareth McCaughan; I merely keep a copy of it on my site.

Nat Queen
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The end is nigh?

I suppose this is the end. There's talk of rescues. Some people think they may still see Phoebe. Some people are proudly stating they'll stay with their RiscPC, like the folks who revel in using the Atari Falcon years after it's demise. Some are saying 'Linux is the future'. Some are saying 'Mac is the future'(at least until Apple folds under Gates in 2 years or less). Some even think Streater straddled by Lara can somehow save the day, by making 'Linux is the future' the same as 'RISC OS is the Future'. Bondar came, tried and was brushed aside. All is lost.

Of course, the real Techno-fiends are having a field-day parading their stuff, arguing about the post-Acorn landscape. Most of us Acorn users are just distressed, knowing that their next machine will be Wintel and wubbish.

David Hammonds
sou0a5@bangor.ac.uk

Disk storage

B&Q are at the moment offering metal storage cases, internal size 365mm x 275mm for £9.99. If you remove the width-way dividers and stack your floppies length ways in 3 columns you can get 108+ disks per column which is 325 per box or mix & match Zip/Syquest. The downside is that CD discs have to go flat, but you can customise dividers with ease. I was moving house and looked for a quick storage device. They are almost made to measure, lock, will hold the weight, and have a carrying handle to boot (no pun intended).

Chris Tatam
ptech@zetnet.co.uk

Uncrunched source

The recent push for un-crunched source to be provided by authors in your letters page is welcome. But A. Evans point about crunching code because "many parts of it are not good examples for budding programmers" misses a key point.

Programmers reading others code don't learn just by seeing good examples, but by criticising code and deciding how they would have done it differently; that's where a large part of the creative thought comes in.

I recommend Kernighan and Plauger's 'The Elements Of Programming Style', 2nd Edition, to anyone who writes lines of code. It's an old book but unsurpassed in terms of insight and common sense, all in a slim volume. ISBN 0-07-034207-5.

Ralph Corderoy
ralph@inputplus.demon.co.uk

Fred, Jim and Sheila

Re your letter in the November 1998 issue of *Acorn User* asking for the origin of Fred, Jim and Sheila, there is a simple answer.

It was me.

Chris Turner, then Chief Engineer, when drawing the circuit of the machine out had taken two I/O expansion lines to the edge of the paper and I wandered into the room (escaping from what, I don't remember – probably programming BASIC I) at 4A Market Hill. He claimed it had taken a long time to get the wires drawn, but now he didn't know what to call them...

I said "Fred and Jim".

So he did.

Later on, we added a 3rd I/O line. Chris, saying that Fred and Jim would be lonely, christened it Sheila.

The rest is (pre)history.

Sophie Wilson
Chief Architect & VP Silicon Architecture; Acorn.

No net blues

With regard to the "Network blues" letter in the November issue, I would like to add that it is certainly possible to support a cluster of Acorn NCs from a Risc PC 700. This requires a Network File Sytem (NFS) server, and, optionally, a BootP server. Both of these server functions can be carried out on a Risc PC.

If Mr. French (or anyone else, for that matter) would like to discuss this further please contact me via email.

Richard Walker
runnyhunny@mindless.com

Hyper stories

Having used HyperStudio recently on a College Course, I was interested in your comments about it. While impressed with the PC version, you really have to jump through hoops to make it work and I really struggled with it. I gave up, bought the Acorn version for home use and went at it half-heartedly

What a difference. In the end, my project ended up as 20Mb of disc space on my A4 portable. It would not run on the PC as the /STK commands would not function, which, in the end showed up the new PCs from which it was supposed to have been videoed.

Acorns should be supported as much as possible in Education, there is no way a pupil of mine could cope with the limited functions of the Windoze Version of HS. All credit to David Miller at TAG for his development work. I look forward to his new updated version.

Thanks also in public to fellow Argonaught D. A. Symes for his help in the Animation sequence.

Chris Ward
Kettering

Open source

Justin Fletcher is right. There are very few situations where it is not worthwhile to release source code with a free program. Not only does it allow others to learn from your code (emphasised in the October Letters page), but more importantly it allows others to improve software.

Whole operating systems have been built – and thrive – on this premise, notably GNU/Linux and FreeBSD. And surprisingly, this mode of development does not result in anarchy, as explained by Eric Raymond in his essay *The Cathedral and the Bazaar* (http://locke.ccil.org/~esr/writings/cathedral.html).

Richard Murray points out that when people make deficient modifications to a program, it can cause problems. But anyone can hack an executable and cause it to crash – however, when source is provided, changes can then be made on much safer ground. If a programmer is worried about his reputation being damaged by other people's changes to their program, it is a simple matter to ensure that the program's licence requires modifications to be clearly shown. More importantly, treating your users as valued co-developers often means they become valuable co-developers.

It is true that some authors will provide source code on request. But it is better that source code be publicly-available: if the author disappeared, your favourite program could become unmaintainable. For example, I recently ported a Unix program to RISC OS: the source was available, so I could start right away, and I will soon send patches to the author. Now I want to improve upon an existing RISC OS program: but the source is not available, and the author has not replied, so I am stuck.

Commercial software companies can also benefit from making their software Open Source (the Open Source movement, incidentally, has a home page at <http://www.opensource.org/>). In a letter, Peter McCaskill points out that Acorn's Draw ``could do with a make-over'', to which a reply came that it requires ``vast amounts of money''. It does not. It only requires Acorn to release Draw's source code, and a large number of capable programmers will collaborate to improve it. After all, software such as Draw and the Toolbox are not Acorn's key products – it does not benefit Acorn or anyone else for Acorn to hoard them. Netscape have already accepted this argument and released the source to Netscape Navigator, aiming to profit from the server side of their business. The number of businesses embracing Open Source can be appreciated by reading the comp.os.linux.annouce newsgroup.

Unfortunately, there seems little chance of Acorn adopting this attitude.

The company's higher echelons now seem to consist of `suits' who cannot understand such arguments. This is embodied by Acorn's refusal to release its RISC_OSLib for free (now considered by Acorn to be obsolete; but it is still useful), because they could not provide support for it – a spurious reason, since no support would be expected for a free product.

It is time for the Acorn community, and Acorn, to welcome Open Source software and reap its benefits – or continue the gradual descent further into obscurity.

Mark Seaborn
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We are wryly amused

How amusing that so soon after the infuriated responses to Grahame Peterson's June 1998 letter people have had it conclusively proved to them that, whether they like it or not, Acorn did need their charity. At least Grahame had a coherent argument – and he was right. The replies were vaguely centred around "I hope you never know what it's like to do without" even though Grahame said he was only talking about those who can afford a better machine.

In response to Mike Kinghan's letter on Reformers and Fundamentalists I would say that it is vitally important to the survival of RISC OS that a real company is seen to be producing Phoebe right now. The idea of porting the RISC OS user interface to Linux is fine in theory but the average person hasn't heard of Linux. The general public buy real computers that are visibly supported by real companies and are for sale in the High Street. Personally I think reducing RISC OS to a layer "on top of Linux" is pointless.

Something that people don't dare say often is that the RISC OS GUI is far from perfect, to run my computer at the level of functionality I expect, I run eight PD utilities on start-up.

Can a Fundamentalist enterprise appearing to be "Acorn Continued" succeed? Maybe Mike is right that "nothing good would come out of that alive" but better that Acorn computers should go down fighting and be consigned to the honourable museum of British computers (Sinclair, Dragon, Lynx) than become a half-baked port to Linux used by a minority of ex-Acorn users.

Chris Bazley
Wimbledon

Suicide is painful

I was devastated to hear the bad news about the show but Acorn scrapping the Workstations Division? That's insanity, the best thing about Acorns is their operating system. Acorn now seem only interested in their ARM chips for toasters and washers but I think that's a very bad move for them as they may well lose out in the end.

Anyway, what's the point of having extremely fast CPUs and CD drives if the operating system you use is a nightmare? Good operating systems are found in ROM.

Acorn's customer support/involvement has been dropping over the years too, another bad mistake I think. My Dad was considering buying three Risc PCs, he e-mailed Acorn twice and did not receive a reply so opted for PCs instead. Three years ago, I could have got through to spares at Acorn to check availability of any part.

On a positive note for the future I do hope something can be arranged to rescue RISC OS, that's what makes Acorn machines so good. Here's hoping that everything will turn out alright in the end, RISC OS is just too good to get scraped. I hope that it will be continually developed and accompany the new breed of ARM powered computers.

Andy Nelson
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Air your views

If there's something you want to 'get off your chest' or you have some interesting information for your fellow Acorn User readers, then write in to:

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The day starts well, meeting Neil and Mark outside the Empire, Leicester Square and heading straight for Chinatown to eat copious amounts of *dim sum*. Neil and Mark are the well-known two from Causality; I think it's easiest to describe Neil as being noisy on the outside, while Mark is noisy on the inside, although Neil is momentarily stunned into silence at the mere sight of my dictaphone.

'You were lucky to catch us,' says Neil. 'I'm off to Hong Kong tomorrow and then we are both relocating to California. We have spent so much time there in the last six months, we thought we should take the plunge; we are going to be working for NCI/Oracle to start with. But don't anyone dare think it is the end of Causality – just think of all the contacts and potential contracts we are going to be making. On the outside very little will have seemed to have changed, except it might be called Causality Inc.'

'We will still support RISC technology wherever we can. The ARM10 has a good future,' adds Mark.

Neil and Mark first met around the time the Risc PC was launched. Neil was an undergraduate at 'war college,' otherwise known as the Royal Military College of Science, originally considering a military career. Mark was doing a PhD at Kings College London, in the same research group as Stephen Streater.

'I remember programming with Stephen on the Archimedes,' says Mark, 'His supervisor became my boss. This particular research group at Kings is notoriously bad for getting people to finish their PhD's. Everyone went off and did things that were far more interesting.'

'I first spoke to Mark on the phone,' says Neil, 'after seeing an advert in *Acorn User* for Mark's dad's Acorn dealership, which happened to have the word Linux in it.

'It's all Gordon Taylor's fault. It all goes back to the April launch of the Risc PC and Gordon Taylor saying: "OK, we have this Acorn machine. What it needs to have is an incredible Unix operating system." Mark had seen a newsgroup posting asking if anyone was interested in the project. There was a gathering at Imperial, then there was a lot of Internet chat.'

'During this time,' says Mark, 'I had being trying to get to grips with the inside of the Risc PC without a technical reference manual, and had started attacking a few things. Acorn World was coming up and we wanted to get something working by then: we managed a command line and a square blob going up and down the screen. It did not look impressive but we actually had it multi-tasking – there was lots of interest.'

> **We hope to make a lot of money out of building super-computers out of ARMs**

To cut a long story short Mark wrote most of the kernel and did most of the work, and Neil did most of the talking. I also must mention here Melvyn Tang Richardson aka 'Nut' and Rob Black, the other two founding members of Causality. There was loads of interest from large companies. Mark was invited to Acorn to talk to Oracle Japan, to show them what Unix could do on the ARM.

'Originally, we were were going to form a non-profit organisation,' says Neil, 'basically to get rid of liability, because we were getting American commercial companies to use it.'

'But NCI offered me a job,' butts in Mark. 'I decided that we would form a company and do it via that instead. Basically I thought it would be better to form a profit-making company in the UK so I could stay in the UK; that's how we started commercially. We have always made money. Contracts pour in. We have even had to turn work down.'

Causality has done work for Acorn: it was involved with Galileo. Its links with Simtec go back to the ill-fated Hydra multiprocessor project. Neil wrote a lot of the support code and the floating point.

'We are doing this new multiprocessor thing with Simtec,' enthused Neil, 'which is with a group of neural network artificial intelligence researchers in the South of France. We hope to make a lot of money out of building supercomputers out of ARMs.'

Mark is no stranger to multiprocessors; at the age of 15 he was building the *Brinney Brain*: 'I used to build a lot of my own computers. I had the Brinney Brain running by the time I was 16: it was a nice podular stand-alone thing'.

The day ends as many a good day has, on the doorstep of Foyle's bookshop, where I say goodbye to Mark. We agree that if we were to go shopping for books together, we'd encourage each other to spend far too much. We had parted from Neil at the tube station in Trafalgar Square on the grounds that he was fussing: he didn't want to walk so as not to wear out his camel-skin shoes. Shoes not for walking? It takes all sorts.

Jill Regan AU

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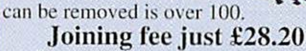


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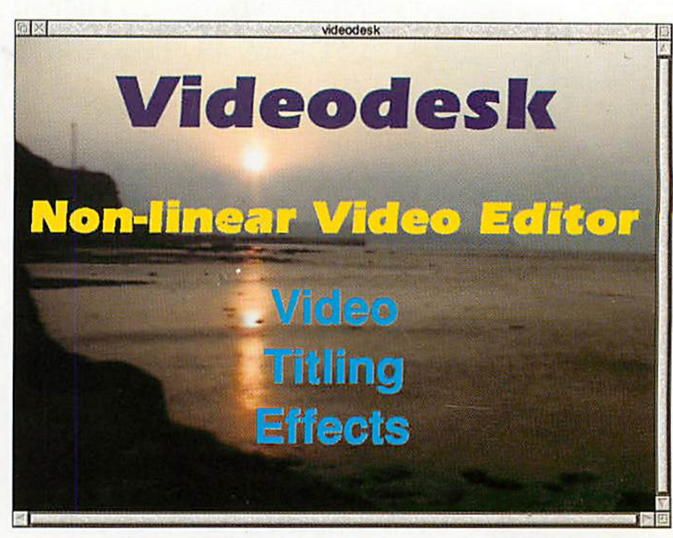


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